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ABSTRACT

This study was undertaken to determine whether additional information useful for guidance or placement could be derived from the existing Graduate Record Examinations (GRE) Advanced Psychology Test. The number of subscores currently reported is limited by the high reliability required to make admissions decisions; subscores used only for guidance and placement would not need to meet such a rigorous standard. Subscores based on eight content areas (Personality, Learning, Measurement, Developmental psychology, Social psychology, Physiological and Comparative psychology, Perceptual and Sensory psychology, and Clinical and Abnormal psychology) were identified by the GRE Advanced Psychology Test Committee of Examiners. These experimental subscores, the two currently reported subscores, and the total score were analyzed. Analysis showed that, for most students, additional information about strengths and weaknesses in some of the areas could be obtained. The particular subscores which could provide useful information varied from student to student. This finding was supported by an examination of fifty randomly chosen answer sheets. It was concluded that subscores based on the content areas identified by the Psychology Committee may have potential for providing additional information for purposes of guidance and placement. Subscores based on a factor analysis of the test, however, were judged not to have equivalent potential. (Author/RCP)

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AN INVESTIGATION OF THE FEASIBILITY OF OBTAINING ADDITIONAL SUBSCORES ON THE GRE ADVANCED PSYCHOLOGY TEST

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ABSTRACT

This study was undertaken to determine whether additional information useful for guidance or placement could be derived from existing Advanced Tests. The number of subscores currently reported for each Advanced Test is limited by the high reliability required for subscores used in making admissions decisions. Subscores used only for guidance and placement would not need to meet such a rigorous standard of reliability. Subscores based on eight content areas were identified by the GRE Advanced Psychology Test Committee of Examiners; analyses of these experimental subscores, of the two currently reported subscores, and of the total score were carried out for two forms of the Advanced Psychology Test.

Analysis of the reliability of the differences among the experimental subscores showed that, for most students, additional information about strengths and weaknesses in some of the eight subscore areas could be obtained. The particular subscores for which useful information could be obtained varied from student to student. This finding was supported by an examination of fifty randomly chosen answer sheets. It was concluded that subscores based on the content areas identified by the Committee of Examiners may have potential for providing additional information for purposes of guidance and placement about most students who take the Advanced Psychology Test. Subscores based on a factor analysis of the test, however, were judged not to have equivalent potential.

An Investigation of the Feasibility of

Obtaining Additional Subscores on the

GRE Advanced Psychology Test

GRE No. 74-4

I. Introduction

In October 1972 the GRE Program began reporting subscores for a number of its Advanced Tests. For several years prior to that date, subscores had been the subject of widespread discussions, and a number of the GRE Committees of Examiners responded positively to the GRE Board's recommendation that subscores be reported. The decision to report subscores stemmed from a feeling on the part of both the Board and several of the Committees of Examiners that more information should be produced from three hours of testing than a single score and that the tests would be more useful if they could indicate strengths and weaknesses in the several subfields of each content area. Also, the Board and Committees recognized that subscores would be valuable for many counseling and placement decisions.

In spite of the widespread agreement about the desirability of reporting subscores, there were a number of areas of concern — including the reliability and independence of the subscores — which centered on the use to which the subscores would eventually be put. If the use of subscores can be restricted to placement and guidance — primarily through the timing of reporting of subscores — the importance of these concerns will diminish. Placement and counseling decisions are reversible, whereas admissions decisions generally are not; therefore, much lower

standards of statistical adequacy would be applicable if subscores were not used for admissions decisions.

Based on then current GRE Program reporting practices -- and the fear that test users would fail to heed advice given with regard to the proper use of subscores -- a decision was reached to limit the initial development of subscores to those which attain a reliability of at least .80 and which have a "corrected" intercorrelation with other subscores of less than .90. Based on these decisions, no more than four such subscores could be obtained from any of the Advanced Tests, and each of the subscores would have to be based on approximately 50 to 80 items in order to obtain the required reliability. Faced with this limitation, several Committees were reluctant to tailor their test specifications to meet the statistical requirements (particularly the need for 50 to 80 items for each subscore), opting instead for coverage of the elements in their discipline in a manner more consistent with emphasis in the undergraduate curriculum. Other Committees, including the Psychology Committee, adopted subscores under the limitations described above.

Since the introduction of subscores in operational tests in 1972, both the GRE Board Research Committee and the Psychology Committee have continued to express an interest in investigating the possibility of reporting more subscores, particularly for guidance purposes. At its meeting in May 1973, and again in May 1974, the Psychology Committee indicated a desire to experiment with the creation of subscores based upon the content area specifications now in use. While recognizing the potential weaknesses in subscores developed in this manner, the Committee nonetheless felt that the potential value of these additional subscores for counseling and placement purposes warranted additional investigation

of both the possibility of developing such subscores and the reporting methods that would be necessary to minimize their potential misuse.

These feelings were reinforced in discussions during meetings of the GRE Board Research Committee, which was then involved in a review of the current and future directions of the GRE Program and of its related activities. Beginning in April 1974 and continuing at a special meeting in June, the Research Committee considered both the broad directions in which the GRE Program might develop and a number of specific propositions concerning the future of the GRE. One of these propositions — endorsed at the June 1974 meeting of the Research Committee and at the September 1974 meeting of the full GRE Board — stated:

> "It is both desirable and feasible to report more detailed and useful part-score information on the basis of the Advanced Tests.
>
> a. This expansion could provide for the generation of additional subscores for all tests in the current format.
>
> b. This expansion could also provide for the generation of subscores designed for use in guidance and placement."

II. Purpose and Procedures

As a result of these discussions, the current study was designed to investigate the number of logically meaningful subscores that can be generated from the Advanced Psychology Test without being bound beforehand by a prespecified reliability which the subscores must attain. Presuming that the subscores would be used only for guidance and placement purposes and not as an integral part of the admissions process, the statistical standards for reliability could be greatly reduced. This relaxation would enable many more subscores to be reported, while

allowing test committees to give continued emphasis to the various elements in their disciplines. Thus, this study examined the reliability and independence of subscores based on the eight major content areas of the Advanced Psychology Test as an initial step in determining the extent to which the propositions endorsed by the GRE Board were conceptually and psychometrically feasible for expansion to the design and administration of the GRE Advanced Tests.

Content analysis was used to define the structure of two forms (UGR2 and VGR1) of the GRE Advanced Psychology Test based on the assumption that a subscore might be developed in each of the nine content areas established by the Committee as part of its test specifications; in addition, a factor analysis was performed to obtain a less subjective examination of the structure of the tests. The analysis was based on two samples selected from the October 1974 administration of the GRE; score distributions were computed and compared to similar score distributions for the Advanced Psychology Test over the previous three-year period and were judged to be essentially the same. As part of the process of conducting the content and factor analyses (described in more detail in the following sections), both preliminary and final results were presented to and discussed with the Psychology Committee in March of 1975 and January of 1976, respectively. Finally, conclusions were drawn, which are presented in the final section of this report.

III. The Content Analysis

As noted above, the current test specifications for the Advanced Psychology Test include nine content areas; these areas and the number of questions associated with each of the areas in each of the two forms of the test are presented in Table 1 on the following page.

Table 1*

Content Area	Number of Questions	
	UGR2	VGR1
Personality	24	25
Learning	36	35
Measurement	25	25
Developmental Psychology	15	15
Social Psychology	23	20
Physiological and Comparative Psychology	25	25
Perception and Sensory Psychology	30	30
Clinical and Abnormal Psychology	17	20
Applied Psychology and Other	5	5

As a first step, routine item analysis and test analysis were performed on these two test forms; the analysis included distributions of the subscores, means, standard deviations, reliabilities, standard errors of measurement, and a correlation matrix of the nine experimental sub-

* It is readily apparent that in these two forms of the test there are too few questions in the area of applied psychology to permit a viable subscore to be obtained, a reflection of the fact that the Psychology Committee has felt that this area is not important enough in the undergraduate curriculum to warrant greater coverage and had not recommended that an experimental subscore in that area be reported. Nevertheless, an analysis of that area was performed so that all the items would be included in the analysis.

scores listed in Table 1 together with the three currently reported scores.* Biserial correlations with each of the twelve scores for each item were computed. These correlations were examined for evidence that some of the items might be misclassified. A few items were discovered which had a higher correlation with a subscore other than the one into which they were placed by the Committee: in each instance, however, the content of the item clearly fell within the area of the subscore in which it had been placed. Tables summarizing these results are presented in Appendix I.

The correlations for pairs of subscores, corrected for attenuation, are presented in Table 2 on the following page; (correlations prior to correction are presented in Appendix II). Table 2a contains the correlations computed from the UGR2 data and Table 2b contains the correlations computed from the VGR1 data. These correlations tend to confirm the Committee of Examiners' feeling that each of the experimental subscores contains some unique information.

It is apparent from Table 2 that some of the pairs of experimental subscores, for instance subscores 1 and 6 and subscores 5 and 6, have much lower correlations with each other than do the subscores being reported at present. Only two entries in the table exceed the .90 limit set for the intercorrelation of subscores. In each of these cases, the correlation computed from the data on the other form of the test

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* The three currently reported scores are a total score (based on all items), an experimental psychology subscore (based on the items in experimental subscores 2, 6, and 7), and a social psychology subscore (based on the items in experimental subscores 1, 4, 5, and 8.) The median correlation, corrected for attenuation, between these two reported subscores for the five most recent forms of the test is .82.

Table 2

Correlations of Pairs of Subscores Corrected for Attenuation

2a. Correlations from UGR2

	1	2	3	4	5	6	7	8
1. Personality		.76	.88	.88	.95	.58	.71	.83
2. Learning	.76		.88	.81	.79	.61	.81	.76
3. Measurement	.88	.88		.74	.84	.57	.78	.84
4. Developmental	.88	.81	.74		.83	.63	.72	.83
5. Social	.95	.79	.84	.83		.54	.72	.79
6. Physiological & Comparative	.58	.61	.57	.63	.54		.75	.64
7. Perceptual & Sensory	.71	.81	.78	.72	.72	.75		.70
8. Clinical & Abnormal	.83	.76	.84	.83	.79	.64	.70	

2b. Correlations from VGR1

	1	2	3	4	5	6	7	8
1. Personality		.77	.76	.74	.68	.62	.67	.90
2. Learning	.77		.80	.79	.75	.83	.83	.76
3. Measurement	.76	.80		.82	.74	.77	.75	.73
4. Developmental	.74	.79	.82		.84	.77	.78	.76
5. Social	.68	.75	.74	.84		.65	.72	.72
6. Physiological & Comparative	.62	.83	.77	.77	.65		.84	.67
7. Perceptual & Sensory	.67	.83	.75	.78	.72	.84		.60
8. Clinical & Abnormal	.90	.76	.73	.76	.72	.67	.60	

for the same two subscores is substantially below .90. Thus, each of the eight subscores appears to meet the criteria of independence set for subscores in the GRE Program. This result confirms the validity of the Committee of Examiners' belief that subscores based on the eight content areas would be about as independent as the two subscores being reported at present. The Committee feels that subscores based on the content areas would be by far the most useful for purposes of guidance and placement, because the curriculum tends to be organized in the same way.

The reliabilities of the subscores based on the eight major content areas were computed from Kudar-Richardson formula 20 and are given in Table 3 below. The reliabilities depend in large measure on the number of items contributing to each subscore. Subscores 2, Learning, and 7, Perceptual & Sensory, have the highest reliabilities and are based on the most questions, 30 and 35 respectively. Subscore 4, Developmental Psychology, has the lowest reliability and is based on the fewest number of questions, 15. The remaining subscores are based on 20 to 25 questions.

Table 3

Reliabilities of Subscores

	Test Form	
Content Area	UGR2	VGR1
1. Personality	.53	.66
2. Learning	.80	.77
3. Measurement	.75	.63
4. Developmental	.45	.48
5. Social	.62	.57
6. Physiological & Comparative	.69	.73
7. Perceptual & Sensory	.78	.77
8. Clinical & Abnormal	.55	.66

The reliability of these subscores is not impressive when judged by usual standards. Only the Learning subscore in UGR2 reaches the standard of reliability required of the subscores being reported at present. Nevertheless, these reliabilities are respectable for subscores based on 15 to 35 questions. The reliability of the difference between any two of these subscores will be fairly modest. The question to be addressed is whether the reliability of the differences between these subscores is high enough to make them helpful in guidance and placement decisions.

Lord (1958) has suggested one way of examining this question. He suggests that the difference between any two test scores may be quite useful even when this difference has very low reliability by conventional standards. He suggests that a criterion for the usefulness of difference scores be set in terms of the proportion of students about whom judgments that one score is higher than another score can be made with 80 to 90 percent accuracy. In the context of guidance and placement, the ability to differentiate among a student's attainment in several subscore areas and to be right 80 to 90 percent of the time might well be worthwhile.

The usefulness for individual guidance of any measure of low reliability is greatly increased under two conditions of use:

1. The measure is used to make broad rather than precise classifications.
2. Judgments are made only about those students with somewhat extreme scores; no judgment is made about those students with less extreme scores.

These conditions are approximated when difference scores are used in the following manner.

1. The subtest scores are plotted on a profile chart as a confidence band extending one standard error of measurement above and below the obtained score.
2. The difference between scores on two subtests is treated as real only when the two confidence bands do not overlap.

The effectiveness of any difference score when used in this way can be evaluated in terms of the proportion of students for whom judgments are made and the proportion of correct judgments; some illustrative results appear in Table 4 below.

Table 4*

Proportion of Comparisons about which Judgments are Made that There is a Real Difference Between Two Test Scores

Reliability of Difference (r_{dd})	Cutting Point (K)	Proportion of Students for Whom Judgments Are Made	Proportion Of Correct Judgments
.09	1.35	.18	.72
.2025	1.26	.21	.81
.3025	1.18	.24	.86
.4225	1.07	.28	.90
.49	1.01	.31	.92
.64	.85	.40	.95

This table shows that difference scores with very low reliability can provide useful information. Difference scores with a reliability of only

* Lord, F.M., The Utilization of Unreliable Difference Scores, Educational Testing Service, RB-58-1, 1958. (For a more extended discussion of Lord's work, see Appendix III.)

.20, for example, can provide judgments that there is a real difference between two test scores for about a fifth of the comparisons made, with 80 percent confidence in the correctness of the judgments made. And, since there are twenty-eight comparisons to be made among the eight subscores for each student, it is not surprising that an examination of fifty randomly chosen answer sheets showed that additional information could be reported for the great majority of students.

The reliability of the difference between each pair of subscores for both test forms is given in Table 5 on the following page. Of the 56 values given in Table 5, 48 are greater than .20, and 35 are greater than .30. This shows that in the great majority of comparisons between pairs of subscores, judgments could be made about 20 to 25 percent of the comparisons with 80 to 85 percent accuracy. As noted above, given twenty-eight comparisons per student, the subscores appear to have a substantial potential to provide useful information for purposes of guidance and placement.

In addition, it should be noted that of the eight instances in which the standard error of the difference between two subscores failed to reach .20, five of them involved a comparison with subscore 4, Developmental Psychology, which was based on only 15 items and has a reliability of less than .50 in each test form. In more recent forms of the test the Committee has raised the number of items in this content category from 15 to 20. Minor changes of this kind in the test specifications, plus a slight increase in the total number of items (the test is quite unspeeded), would serve to increase slightly the number of students about whom judgments could be made with reasonable accuracy.

In summary, it appears that subscores based on the content areas defined by the Committee have considerable potential to provide information

Table 5

Reliability of the Difference

Between Each of the Experimental Subscores

5a. Data from UGR2

	1	2	3	4	5	6	7	8
1. Personality		.34	.20	.11	.06	.40	.38	.17
2. Learning	.34		.29	.27	.34	.53	.43	.35
3. Measurement	.20	.29		.30	.26	.52	.42	.24
4. Developmental	.11	.27	.30		.17	.34	.32	.15
5. Social	.06	.34	.26	.17		.47	.40	.23
6. Physiological & Comparative	.40	.53	.52	.34	.47		.40	.38
7. Perceptual & Sensory	.38	.43	.42	.32	.40	.40		.39
8. Clinical & Abnormal	.17	.35	.24	.15	.23	.38	.39	

5b. Data from VGR1

	1	2	3	4	5	6	7	8
1. Personality		.37	.31	.26	.34	.46	.46	.17
2. Learning	.37		.32	.28	.34	.35	.37	.38
3. Measurement	.31	.32		.19	.28	.34	.37	.33
4. Developmental	.26	.28	.19		.15	.28	.29	.25
5. Social	.34	.34	.28	.15		.25	.37	.31
6. Physiological & Comparative	.46	.35	.34	.28	.25		.33	.44
7. Perceptual & Sensory	.46	.37	.37	.29	.37	.33		.51
8. Clinical & Abnormal	.17	.38	.33	.25	.31	.44	.51	

about students with unusually high or low scores for use in guidance and placement. The standard error of the difference between the great majority of pairs of subscores would allow judgments to be made about 20 to 25 percent of the comparisons with 80 to 85 percent accuracy; a random sample of answer sheets shows that this would provide useful information for the great majority of students. The extent to which students and schools would or could take advantage of this information if it were available is not known.

IV. Factor Analysis

Factor analysis was used as a second method of examining the structure of these two forms of the GRE Psychology Test. The Psychology Committee's content analysis is a logical way of relating test content to the curriculum, and is intended to insure that all the major areas of curriculum are appropriately represented in the tests. In view of the demonstration of the relative independence of the subscores based on content areas, the results of the content analysis became relatively less important and the fact that each content area did not emerge as a separate factor was not disturbing. Moreover, such a result is consistent with the fact that content areas are not learned independently, that many required introductory courses cover all the major areas of psychology, and that much psychological theory is applicable across content areas.

Factor analysis offers an independent, parsimonious description of the observed data. This is a legitimate way to study the structure of the tests, and the results should offer insights about the way the tests are functioning.

Factor analytic techniques were used to investigate two separate questions:

1. To what extent do the items in each of the experimental subscores appear to be measuring a single general factor?
2. Do other logically valid and potentially useful groupings (subscores) of the items exist in the data?

Theoretically, one would proceed by obtaining the intercorrelations among all 200 questions for each of the tests. In practice, this number of variables (questions) is far too many to economically subject to a conventional factor analysis. Therefore, each test was split into two parts, the first consisting of the odd numbered questions and the second of the even numbered questions. The basic idea behind this approach is an intuitive one. It is assumed that the odd numbered items of a long test would have the same number of factors as the even numbered items of the test, and that these two sets of factors would be approximations of the common factors of the total test. Furthermore, it may be expected that canonical correlations between the principal component scores of the odd numbered items and the even numbered items would indicate by their magnitudes the number of important factors in each subset of items and so of the whole test, provided that enough principal components were canonically correlated for some small canonical correlations among them to indicate that there were unimportant components that could be set aside as random error.

A component analysis was obtained for each part, consisting of six principal components. The correlations of the six principal components of the two parts of each test were obtained, and subjected to canonical

correlation analysis. In each case, this analysis revealed one very highly correlated pair of canonical variates. The three smallest canonical correlations were distinctly trivial in each case.

The six canonical variates were condensed into three orthogonal "quasi-factors" by rescaling to unit variance the sum of each pair of correlated canonical variates. These three sums of corresponding odd and even canonical variates were correlated with the original item scores. The rescaled sums of corresponding canonical variates are approximations to the principal component scores of the sample matrix of correlations among all 200 items. Their correlations with the original item scores is therefore an approximation to the principal component analysis of all 200 items into three components. It was this matrix of correlations of item scores (with approximate principal component scores) that was treated as if it were a factor matrix and transformed to an oblique solution.

The canonical correlations between the six odd numbered and six even numbered item components are presented in Table 6. In each test form only one of the correlations exceeds the .80 standard suggested in the proposal as appropriate to identify factors common to both sets of data. This suggests that if one were seeking the most parsimonious but adequate description of the observed data, each test could be described essentially in terms of a single factor. This description of the structure of each test is, of course, consistent with the practice of having a single GRE Advanced Test in the area of psychology and with reporting a total score for the test.

Table 6

Canonical Correlations Between Six
Six Odd Numbered Item Components and Six
Even Numbered Item Components

	UGR2	VGR1
1	.8931	.8933
2	.5091	.4986
3	.3782	.4130
4	.2125	.1925
5	.1420	.1758
6	.0499	.1174

In addition to the one well defined factor in each test form, there are two less clearly defined factors; the three remaining canonical correlations in each form are definitely trivial. Because the purpose of this analysis was to seek potentially useful groupings (subscores) of the questions, we considered in detail the three factor solution.

The finding that the entire test contains only one predominant factor suggests that it is unnecessary to subject each of the content area subscores to factor analysis as proposed for the research project. The results of the item analysis demonstrated that, with the exception of a few items, the subscores are scales that "hang together" rather well.

Tables of the fifty items with the highest correlations with each of the three factors in the oblique structure matrices are presented in Appendices IVa and IVb. The correlations among the factors in each form are presented in Table 7 below. Although the factors have substantial correlations with each other, they are less highly correlated than the subscores being reported at present.

Table 7

Correlations Among the Three Factors
in the Oblique Structure Matrices

K-UGR2

Factor	I	II	III
I		.523	.652
II	.523		.504
III	.652	.504	

K-VGR1

Factor	I	II	III
I		.548	.602
II	.548		.561
III	.602	.561	

Next we examined the factor analytic results in relation to the content classifications of the items. Table 8 gives the content classifications of the fifty items with the highest correlations with each of the three factors in VGR1. Of the 50 items with highest correlations with factor 1, 44 of them contribute to the Experimental subscore (content areas 2,6,7) and only 2 to the Social Psychology subscore

(content areas 1,4,5,8). Of the 50 items with the highest correlations with factor 2, 23 of them contribute to the Experimental subscore, and 23 to the Social subscore. Of the fifty items with the highest correlations with factor 3, 22 contribute to the Experimental subscore and 23 to the Social subscore. Factor 1, then, is predominantly in the area of Experimental Psychology, while factors 2 and 3 are about evenly divided between the areas of Experimental and Social Psychology.

Table 8

Content Classification of the 50 Items with the Highest Correlations on Each of the Three Factors in VGR1

	Factor 1	Factor 2	Factor 3
1. Personality	2	10	5
2. Learning	11	13	7
3. Measurement	4	3	5
4. Development	--	1	4
5. Social	--	2	8
6. Physiological & Comparative	15	4	8
7. Perceptual & Sensory	18	6	7
8. Clinical & Abnormal	--	10	6
9. Applied & Other	—	1	--

The results of the factor analysis of this form of the test were presented to the GRE Psychology Committee at its meeting in March 1975. The Committee identified factor 1 as appearing to measure knowledge of psychological facts, such as the functions of rods and cones, primarily in content areas 2, 6, and 7. The Committee identified factor 2 as appearing to measure knowledge of psychological theories across all the content areas. A typical item would be: "The structural concepts of Erikson's theory are referred to as...." The Committee identified factor 3 as primarily measuring the candidates' powers of analysis and interpretation. Items with high correlations with factor 3 typically required the candidate to analyze or interpret stimulus material presented in the test.

The Committee did not believe that subscores based on these factors would be useful for guidance and placement. The point was made that the curriculum is organized along content-determined lines, and that students need to know their strengths and weaknesses in those terms. The Committee felt that the results of the factor analysis in no way limited the usefulness of subscores based on content areas.

Table 9 on the following page gives the content classifications of the 50 items with the highest correlations with each of the three factors in UGR2, which were discussed with the Psychology Committee at their January 1976 meeting. Of the 50 items with the highest correlations with factor 1, 21 of them contribute to the Experimental Psychology subscore, and 17 to the Social Psychology subscore. Of the 50 items with the highest correlations with factor 2, 45 of them contribute to the Experimental Psychology subscore, and only 4 to the Social Psychology subscore. Of the 50 items with the highest correlations with factor 3, 34 of them contribute to the Experimental Psychology subscore and only 5 to the Social Psychology subscore.

Table 9

Content Classification of the 50 Items with the Highest Correlations on Each of the Three Factors in UGR2

	Factor 1	Factor 2	Factor 3
1. Personality	5	2	1
2. Learning	11	9	15
3. Measurement	11	4	11
4. Developmental	3	1	0
5. Social	5	0	3
6. Physiological & Comparative	3	17	3
7. Perceptual & Sensory	5	17	13
8. Clinical & Abnormal	6	0	4
9. Applied & Other	1	0	0

Although there are some obvious differences between these results and those obtained for VGR1 in terms of the content classifications of the items, the Committee felt that the two analyses are basically consistent in identifying factors which measure primarily knowledge of facts, knowledge of theories, and powers of interpretation and analysis. In this analysis, the first factor is almost evenly divided between the Experimental and Social Psychology areas, while factors 2 and 3 are made predominantly of items in the area of Experimental Psychology. In form VGR1, the first factor correlated highly with items in the Experimental area, while factors 2 and 3 were about evenly divided between the Experimental and Social Psychology areas.

It appears from Tables 8 and 9 that the first factor in the VGR1 analysis, which correlated highly with items in the areas of Physiological and Comparative Psychology, Perception and Sensory Psychology, and Learning, corresponds to the second factor in UGR2. Content analysis at the item level confirms this, factor 2 in UGR2 correlates highly with items that tap the same kind of knowledge of facts in Experimental Psychology as those in factor 1 of VGR1.

Of the seven items with the highest correlations on factor 1 in UGR2, six are in the area of measurement. This factor is characterized by items requiring a knowledge of the theories of psychology, including knowledge of measure theory, and corresponds to the second factor in VGR1.

As in the analysis of VGR1, the items which correlated highly with the third factor in UGR2 tend to be those which require the candidate to analyze or interpret stimulus material presented in the test.

For purposes of this study, it appears that the similarities between the factor analyses of the two forms are most important. The analyses provide the Committee of Examiners with a new way of looking at the structure of the test. While subscores based on these factors are logically defensible, the Committee of Examiners does not believe they would be useful for purposes of guidance and placement. Because of the Committee's reservations about subscores based on the results of the factor analysis, these subscores were not subjected to the reliability and independence analysis that were applied to the Committee's content-based subscores. Likewise, no comparison was made of how well the Committee's content analysis fits the data in comparison with the structure determined by factor analysis.

V. Conclusion

The goal of this study has been to see if a set of subscores which would be both meaningful and statistically appropriate for guidance and placement decisions could be identified, while maintaining the ability of the Psychology Test to produce a single score with appropriate content coverage and statistical properties for use in admissions decisions.

Subscores based on the content areas defined by the Committee appear to have substantial potential for providing useful information about students with unusually high or low scores for purposes of guidance and placement. Comparisons between pairs of subscores would allow judgments that some subscores are higher than others to be made for most students with 80 to 85 percent accuracy.

Finally, the factor analysis showed only one well-defined factor in each of the tests, which can be described basically in terms of a single factor. Subscores based on the three-factor solution do not appear to have much potential for use in guidance and placement decisions.

LIST OF APPENDICES

I. Item Statistics, by Subscore: Summary of Means and Standard Deviations of Deltas and Biserial Correlations

   A. For Form K-UGR2 (10 tables)

   B. For Form K-VGR1 (10 tables)

II. Correlation Tables

   A. For Form K-UGR2

   B. For Form K-VGR1

   C. Summary of Item Overlap Among Variables

III. Citation from Lord, F.M., The Utilization of Unreliable Difference Scores, Educational Testing Service, RB-58-1, 1958.

IV. Item/Factor Correlations in Rank Order, for each Factor and for Communality

   A. For Form K-UGR2 (4 tables)

   B. For Form K-VGR1 (4 tables)

APPENDIX I-A

GRE ADVANCED PSYCHOLOGY Form K-UGR2

Subscore	Δ.	BISERIAL CORRELATION									
		Total	Personality (Subscore 1)	Learning (Subscore 2)	Measurement (Subscore 3)	Developmental Psychology (Subscore 4)	Social Psychology (Subscore 5)	Physiological and Comparative Psychology (Subscore 6)	Perception and Sensory Psychology (Subscore 7)	Clinical and Abnormal Psychology (Subscore 8)	Other (Subscore 9)
1. Mean	14.6	.29	.41	.20	.24	.18	.24	.15	.19	.19	.07
S.D.	2.8	.14	.09	.12	.11	.08	.12	.09	.12	.12	.06
n	24	23	23	23	23	23	23	23	23	23	23
2. Mean	12.8	.40	.23	.47	.32	.23	.27	.22	.31	.24	.12
S.D.	2.1	.13	.08	.12	.12	.08	.10	.09	.10	.09	.05
n	36	36	36	36	36	36	36	36	36	36	36
3. Mean	11.6	.44	.30	.36	.33	.23	.31	.23	.32	.29	.12
S.D.	2.6	.11	.08	.10	.11	.07	.08	.08	.08	.09	.06
n	25	24	24	24	24	24	24	24	24	24	24
4. Mean	11.8	.29	.21	.23	.21	.45	.21	.17	.20	.20	.09
S.D.	2.5	.10	.08	.08	.07	.07	.08	.08	.09	.08	.04
n	15	15	15	15	15	15	15	15	15	15	15
5. Mean	13.0	.34	.26	.26	.27	.21	.47	.18	.24	.22	.11
S.D.	2.9	.11	.08	.10	.10	.08	.09	.07	.08	.09	.05
n	23	22	22	22	22	22	22	22	22	22	22
6. Mean	14.5	.31	.17	.21	.19	.16	.16	.47	.27	.18	.09
S.D.	2.2	.16	.10	.14	.12	.10	.12	.15	.15	.12	.06
n	25	25	25	25	25	25	25	25	25	25	25
7. Mean	13.6	.41	.23	.32	.30	.21	.25	.28	.50	.22	.10
S.D.	2.0	.12	.09	.09	.11	.09	.08	.11	.10	.11	.04
n	30	30	30	30	30	30	30	30	30	30	30
8. Mean	11.2	.35	.24	.26	.27	.22	.24	.21	.23	.49	.10
S.D.	3.1	.10	.09	.10	.09	.08	.09	.06	.08	.08	.05
n	17	15	15	15	15	15	15	15	15	15	15
9. Mean	15.0	.25	.14	.20	.18	.16	.16	.17	.18	.15	.62
S.D.	2.6	.11	.09	.11	.09	.08	.06	.12	.09	.08	.03
n	5	5	5	5	5	5	5	5	5	5	5

GRE ADVANCED PSYCHOLOGY Form K-UGR2

Subscore 1 - Personality

Item	Δ	BISERIAL CORRELATION									
		Total (n=200)	Personality (n=24)	Learning (n=36)	Measurement (n=25)	Developmental Psychology (n=15)	Social Psychology (n=23)	Physiological and Comparative Psychology (n=25)	Perception and Sensory Psychology (n=30)	Clinical and Abnormal Psychology (n=17)	Other (n=5)
2	14.0	.19	.31	.11	.15	.09	.11	.09	.14	.11	.05
6	10.0	.24	.41	.20	.18	.17	.20	.12	.12	.11	.08
9	10.3	.28	.43	.16	.21	.16	.29	.13	.17	.19	.13
36	14.3	.22	.38	.14	.21	.11	.16	.15	.11	.12	.10
60	10.3	.42	.49	.34	.34	.25	.35	.22	.29	.33	.15
61	>20.0	-	-	-	-	-	-	-	-	-	-
62	19.2	.22	.43	.14	.27	.11	.26	.08	.07	.10	.07
63	17.3	-.09	.18	-.13	-.09	-.09	-.04	-.06	-.07	-.12	-.08
66	9.0	.57	.46	.42	.48	.31	.42	.35	.52	.40	.14
71	13.2	.35	.48	.24	.31	.22	.27	.16	.15	.33	.18
72	14.9	.43	.51	.27	.35	.27	.43	.19	.32	.32	.09
73	16.4	.34	.48	.27	.25	.19	.28	.12	.24	.27	.10
74	16.1	.50	.57	.39	.37	.27	.36	.27	.37	.34	.06
75	14.8	.38	.45	.32	.30	.31	.35	.18	.25	.17	.09
76	14.0	.45	.53	.33	.39	.25	.35	.21	.30	.34	.16
77	16.5	.10	.21	.08	.10	.11	.11	-.01	.05	-.01	.06
78	13.9	.27	.43	.18	.24	.16	.20	.17	.15	.16	-.01
150	11.0	.31	.45	.27	.27	.22	.20	.17	.18	.21	.05
155	15.0	.18	.40	.12	.12	.17	.12	.11	.10	.12	.04
157	15.0	.19	.32	.10	.13	.16	.07	.10	.14	.15	.01
162	16.5	.31	.43	.21	.22	.18	.27	.17	.19	.19	.03
177	14.9	.26	.34	.12	.20	.19	.28	.17	.20	.14	-.02
178	15.7	.30	.44	.22	.24	.22	.28	.12	.15	.15	.13
179	16.7	.25	.33	.19	.20	.15	.13	.07	.23	.21	-.01
Mean	14.6	.29	.41	.20	.24	.18	.24	.15	.19	.19	.07
S.D.	2.8	.14	.09	.12	.11	.08	.12	.09	.12	.12	.06
n	24	23	23	23	23	23	23	23	23	23	23

GRE ADVANCED PSYCHOLOGY Form K-UGR2

Subscore 2 - Learning

Item	Δ.	BISERIAL CORRELATION									
		Total (n=200)	Personality (n=24)	Learning (n=36)	Measurement (n=25)	Developmental Psychology (n=15)	Social Psychology (n=23)	Physiological and Comparative Psychology (n=25)	Perception and Sensory Psychology (n=30)	Clinical and Abnormal Psychology (n=17)	Other (n=5)
13	7.4	.57	.31	.65	.43	.33	.40	.40	.47	.38	.18
14	7.1	.43	.23	.48	.31	.19	.32	.30	.32	.27	.09
16	10.4	.58	.36	.64	.43	.39	.44	.36	.42	.34	.23
20	9.9	.40	.21	.47	.34	.23	.31	.17	.34	.21	.08
24	11.1	.60	.33	.67	.49	.38	.36	.38	.48	.37	.19
26	11.1	.54	.37	.54	.44	.37	.41	.29	.39	.34	.15
29	11.4	.38	.23	.41	.30	.26	.25	.24	.29	.25	.12
31	12.9	.46	.23	.52	.40	.28	.28	.26	.32	.31	.15
34	12.3	.56	.31	.57	.54	.29	.39	.32	.43	.32	.19
40	12.8	.38	.26	.48	.28	.26	.26	.18	.22	.20	.13
41	13.5	.41	.23	.47	.36	.21	.26	.21	.33	.23	.14
43	12.9	.45	.26	.52	.32	.24	.31	.21	.34	.33	.20
44	13.0	.51	.30	.54	.43	.24	.29	.29	.40	.34	.10
48	12.9	.17	.11	.27	.16	.09	.09	.04	.11	.12	.06
99	14.3	.31	.21	.41	.23	.16	.18	.18	.22	.19	.04
100	16.2	.21	.05	.31	.11	.15	.14	.14	.15	.10	.08
101	13.5	.49	.24	.56	.39	.27	.38	.21	.40	.24	.12
102	13.7	.47	.26	.53	.39	.25	.37	.21	.38	.22	.11
103	13.6	.35	.17	.42	.32	.22	.32	.12	.24	.20	.12
104	15.3	.40	.26	.44	.31	.21	.21	.26	.31	.27	.15
105	14.5	.34	.22	.39	.28	.21	.22	.17	.28	.18	.11
106	16.1	.44	.26	.53	.30	.29	.24	.32	.31	.27	.12
107	11.8	.10	.05	.16	.05	.06	.06	.00	.07	.05	.03
108	11.5	.41	.32	.38	.29	.23	.28	.26	.32	.28	.07
109	11.4	.36	.18	.42	.31	.18	.22	.20	.29	.23	.09
147	10.9	.43	.25	.49	.32	.24	.28	.27	.31	.31	.22
148	12.6	.14	.07	.24	.05	.04	.05	.08	.14	.00	.05
153	13.7	.47	.25	.56	.37	.27	.31	.23	.37	.26	.10
159	14.0	.30	.19	.39	.24	.20	.16	.13	.19	.21	.13
163	16.2	.25	.12	.31	.17	.13	.19	.16	.20	.08	.10
176	13.2	.33	.20	.36	.25	.17	.24	.21	.25	.22	.14
192	14.7	.24	.15	.34	.22	.15	.06	.14	.16	.09	.07
193	15.1	.55	.33	.64	.49	.24	.33	.27	.44	.30	.15
194	11.1	.45	.20	.51	.42	.30	.35	.27	.37	.21	.15
195	15.2	.58	.32	.70	.55	.27	.36	.28	.48	.30	.17
196	12.7	.48	.30	.61	.37	.26	.29	.26	.35	.27	.14
Mean	12.8	.40	.23	.47	.32	.23	.27	.22	.31	.24	.12
S.D.	2.1	.13	.08	.12	.12	.08	.10	.09	.10	.09	.05
n	38	36	36	36	36	36	36	36	36	35	36

GRE ADVANCED PSYCHOLOGY Form K-UGR2

Subscore 3 - Measurement

Item	Δ	BISERIAL CORRELATION									
		Total (n=200)	Personality (n=24)	Learning (n=36)	Measurement (n=25)	Developmental Psychology (n=15)	Social Psychology (n=23)	Physiological and Comparative Psychology (n=25)	Perception and Sensory Psychology (n=30)	Clinical and Abnormal Psychology (n=17)	Other (n=5)
22	10.9	.24	.14	.15	.33	.14	.17	.08	.18	.18	.02
37	12.9	.38	.27	.31	.47	.30	.30	.14	.27	.31	.08
39	12.3	.32	.25	.27	.42	.15	.22	.14	.24	.14	.07
53	< 6.0	-	-	-	-	-	-	-	-	-	-
54	7.6	.43	.35	.32	.48	.37	.35	.18	.36	.32	.11
59	7.1	.55	.37	.43	.63	.26	.40	.34	.39	.32	.17
65	13.7	.32	.21	.27	.45	.16	.20	.16	.23	.18	.10
68	10.0	.53	.43	.41	.68	.22	.36	.25	.35	.37	.16
93	14.6	.44	.31	.31	.40	.24	.29	.32	.41	.24	.15
130	14.4	.55	.34	.46	.62	.25	.37	.34	.41	.35	.10
131	13.4	.62	.46	.52	.67	.26	.42	.33	.45	.44	.15
132	11.9	.33	.24	.29	.44	.17	.20	.18	.24	.21	.07
133	15.0	.23	.16	.16	.33	.10	.21	.12	.19	.10	.02
134	9.0	.61	.36	.50	.66	.32	.42	.37	.42	.42	.21
135	10.9	.61	.33	.58	.67	.31	.43	.34	.44	.41	.21
136	8.5	.46	.24	.39	.52	.19	.35	.27	.35	.31	.19
137	12.2	.39	.25	.32	.51	.23	.23	.15	.28	.24	.12
151	11.0	.56	.43	.47	.67	.29	.43	.28	.38	.38	.18
161	12.8	.34	.21	.30	.45	.16	.22	.13	.22	.22	.08
165	12.0	.43	.26	.36	.56	.17	.29	.24	.30	.29	.01
166	11.	.53	.39	.47	.63	.31	.37	.20	.36	.39	.22
197	14.4	.42	.27	.33	.52	.26	.28	.20	.30	.27	.07
198	8.6	.54	.37	.43	.63	.28	.35	.32	.40	.28	.16
199	16.1	.39	.27	.34	.54	.15	.27	.15	.27	.25	.07
200	13.0	.42	.32	.35	.52	.19	.29	.20	.29	.26	.15
Mean	11.6	.44	.30	.36	.53	.23	.31	.23	.32	.29	.12
S.D.	2.6	.11	.08	.10	.11	.07	.08	.08	.08	.09	.06
n	25	24	24	24	24	24	24	24	24	24	24

GRE ADVANCED PSYCHOLOGY Form K-UGR2

Subscore 4 - Developmental Psychology

Item	Δ	BISERIAL CORRELATION									
		Total (n=200)	Personality (n=24)	Learning (n=36)	Measurement (n=25)	Developmental Psychology (n=15)	Social Psychology (n=23)	Physiological and Comparative Psychology (n=25)	Perception and Sensory Psychology (n=30)	Clinical and Abnormal Psychology (n=17)	Other (n=5)
1	10.0	.25	.12	.21	.15	.37	.19	.15	.20	.14	.02
5	6.8	.40	.33	.33	.31	.44	.28	.22	.23	.35	.06
27	11.5	.21	.20	.18	.18	.40	.15	.08	.08	.18	.09
28	11.4	.40	.30	.30	.30	.59	.30	.17	.28	.28	.15
49	11.0	.38	.27	.32	.29	.56	.34	.21	.27	.24	.10
57	8.1	.28	.26	.24	.22	.41	.24	.06	.11	.21	.13
94	14.4	.20	.13	.17	.14	.40	.15	.10	.13	.16	.05
95	10.7	.16	.11	.12	.09	.38	.09	.09	.11	.06	.07
96	16.2	.15	.09	.08	.10	.36	.14	.06	.10	.10	.01
97	10.3	.39	.25	.33	.29	.52	.28	.18	.27	.28	.10
98	13.1	.29	.17	.24	.17	.39	.16	.18	.21	.19	.10
156	11.5	.26	.19	.17	.19	.41	.12	.17	.23	.15	.09
158	13.5	.22	.14	.14	.15	.45	.13	.25	.13	.15	.12
190	14.6	.47	.34	.35	.31	.54	.36	.35	.40	.29	.17
191	14.7	.34	.23	.28	.21	.53	.26	.26	.26	.20	.14
Mean	11.8	.29	.21	.23	.21	.45	.21	.17	.20	.20	.09
S.D.	2.5	.10	.08	.08	.07	.07	.08	.08	.09	.08	.04
n	15	15	15	15	15	15	15	15	15	15	15

GRE ADVANCED PSYCHOLOGY Form K-UGR2

Subscore 5 - Social Psychology

Item	Δ	BISERIAL CORRELATION									
		Total (n=200)	Personality (n=24)	Learning (n=36)	Measurement (n=25)	Developmental Psychology (n=15)	Social Psychology (n=23)	Physiological and Comparative Psychology (n=25)	Perception and Sensory Psychology (n=30)	Clinical and Abnormal Psychology (n=17)	Other (n=5)
4	16.1	.20	.13	.12	.13	.08	.34	.09	.21	.08	.05
15	7.1	.50	.33	.39	.37	.28	.53	.35	.38	.41	.07
17	9.5	.36	.33	.29	.25	.26	.41	.21	.24	.27	.16
23	10.7	.37	.28	.28	.30	.22	.52	.15	.22	.28	.15
32	11.0	.34	.30	.27	.23	.21	.44	.21	.23	.23	.09
33	8.3	.51	.34	.39	.46	.36	.62	.28	.36	.38	.16
46	10.4	.40	.29	.33	.32	.23	.52	.25	.27	.24	.20
50	13.9	.43	.40	.37	.33	.29	.45	.25	.27	.31	.22
79	13.5	.27	.23	.18	.21	.22	.40	.13	.18	.10	.08
86	12.5	.34	.27	.28	.28	.21	.49	.14	.22	.23	.07
87	16.1	.19	.14	.09	.15	.07	.28	.11	.17	.13	.08
88	14.6	.35	.24	.27	.25	.22	.51	.17	.25	.19	.11
89	11.7	.35	.30	.30	.27	.26	.48	.13	.20	.26	.12
90	16.0	.23	.24	.11	.21	.15	.42	.10	.13	.14	.11
91	16.1	.34	.26	.22	.23	.14	.57	.18	.24	.16	.13
92	12.-	.24	.15	.16	.17	.10	.37	.14	.18	.16	.05
167	12.0	.43	.28	.35	.45	.25	.48	.22	.31	.27	.03
168	12.6	.21	.16	.13	.17	.11	.33	.08	.18	.15	.02
169	12.7	.51	.38	.39	.43	.33	.66	.22	.38	.34	.13
170	11.6	.51	.33	.45	.44	.32	.58	.24	.39	.33	.15
183	>20.0	-	-	-	-	-	-	-	-	-	-
188	14.4	.22	.16	.21	.17	.14	.41	.06	.11	.10	.13
189	16.4	.25	.25	.18	.16	.15	.45	.14	.14	.12	.13
Mean	13.0	.34	.26	.26	.27	.21	.47	.18	.24	.22	.11
S.D.	2.9	.11	.08	.10	.10	.08	.09	.07	.08	.09	.05
n	23	22	22	22	22	22	22	22	22	22	22

GRE ADVANCED PSYCHOLOGY Form K-UGR2

Subscore 6 - Physiological and Comparative Psychology

Item	Δ_e	BISERIAL CORRELATION									
		Total (n=200)	Personality (n=24)	Learning (n=36)	Measurement (n=25)	Developmental Psychology (n=15)	Social Psychology (n=23)	Physiological and Comparative Psychology (n=25)	Perception and Sensory Psychology (n=30)	Clinical and Abnormal Psychology (n=17)	Other (n=5)
10	13.3	.37	.19	.23	.27	.19	.22	.54	.31	.25	.07
11	18.1	.14	.09	.09	.04	.11	.06	.28	.20	.00	-.04
42	11.1	.40	.22	.31	.24	.22	.21	.59	.37	.20	.15
47	12.5	.59	.39	.45	.38	.35	.38	.64	.56	.34	.16
58	15.1	.24	.10	.18	.15	.10	.10	.51	.17	.10	.03
64	16.4	.38	.17	.23	.23	.15	.17	.57	.36	.22	.02
67	12.7	.39	.20	.30	.25	.21	.24	.54	.33	.19	.11
69	16.0	.00	-.07	-.06	-.03	-.04	-.02	.24	-.04	.03	.04
70	11.4	.54	.34	.39	.45	.29	.34	.54	.42	.41	.13
122	13.7	.21	.13	.10	.11	.10	.15	.39	.18	.09	.07
123	11.7	.19	.16	.08	.11	.15	.12	.33	.09	.20	.06
124	13.9	.45	.22	.35	.25	.30	.25	.57	.37	.29	.17
125	15.1	.36	.21	.28	.23	.25	.22	.46	.31	.19	.17
126	14.5	.41	.22	.32	.21	.17	.14	.67	.35	.22	.12
127	15.7	.50	.24	.38	.32	.28	.20	.73	.42	.30	.11
128	17.1	.32	.11	.21	.16	.07	.19	.48	.41	.12	.19
129	13.6	.06	-.02	-.04	.01	-.03	.02	.38	.04	-.08	-.03
146	11.4	.42	.18	.33	.26	.20	.23	.63	.37	.30	.17
152	15.0	.50	.32	.40	.36	.24	.30	.50	.44	.27	.10
160	11.3	.40	.22	.28	.21	.32	.24	.59	.34	.29	.10
164	17.7	.23	.10	.11	.13	.15	.00	.45	.17	.15	.12
184	15.1	.24	.14	.14	.16	.12	.05	.36	.18	.19	.07
185	18.9	.06	.10	-.06	.01	-.01	.05	.21	.05	-.08	.06
186	16.0	-.05	-.03	-.07	-.10	-.01	-.07	.12	-.09	.00	-.08
187	15.1	.31	.12	.21	.17	.13	.13	.52	.27	.20	.02
Mean	14.5	.31	.17	.21	.19	.16	.16	.47	.27	.18	.09
S.D.	2.2	.16	.10	.14	.12	.10	.12	.15	.15	.12	.06
n	25	25	25	25	25	25	25	25	25	25	25

GRE ADVANCED PSYCHOLOGY Form K-UGR2

Subscore 7 - Perception and Sensory Psychology

Item	A.	BISERIAL CORRELATION									
		Total (n=200)	Personality (n=24)	Learning (n=36)	Measurement (n=25)	Developmental Psychology (n=15)	Social Psychology (n=23)	Physiological and Comparative Psychology (n=25)	Perception and Sensory Psychology (n=30)	Clinical and Abnormal Psychology (n=17)	Other (n=5)
7	12.7	.55	.38	.44	.40	.34	.41	.33	.58	.37	.15
18	10.0	.53	.32	.42	.40	.37	.38	.36	.57	.35	.14
25	11.5	.48	.28	.35	.35	.22	.27	.41	.59	.26	.13
30	12.0	.43	.24	.36	.36	.23	.31	.24	.48	.28	.11
35	12.5	.36	.19	.22	.23	.24	.20	.28	.47	.24	.14
36	12.2	.49	.31	.40	.43	.27	.26	.26	.55	.33	.08
45	13.4	.43	.23	.33	.27	.22	.23	.36	.49	.29	.18
52	11.6	.40	.22	.33	.29	.20	.31	.19	.45	.22	.12
110	12.3	.39	.27	.28	.29	.19	.31	.24	.42	.25	.05
111	13.7	.43	.24	.33	.23	.19	.18	.45	.56	.23	.14
112	12.9	.28	.09	.23	.16	.14	.16	.21	.36	.10	.12
113	13.4	.45	.20	.33	.24	.24	.23	.51	.54	.19	.16
114	14.1	.41	.21	.29	.33	.25	.21	.30	.50	.24	.14
115	13.5	.51	.34	.36	.35	.18	.26	.45	.64	.24	.14
116	13.8	.60	.38	.45	.43	.34	.35	.44	.68	.37	.13
117	16.3	.32	.28	.42	.41	.25	.28	.42	.59	.28	.17
118	17.3	.52	.28	.43	.45	.28	.28	.32	.61	.31	.08
119	15.2	.16	.06	.13	.07	.06	.05	.11	.29	.07	.01
120	16.7	.36	.19	.27	.29	.07	.18	.24	.54	.13	.06
121	18.1	.27	.16	.25	.22	.03	.09	.16	.41*	-.01	.03
141	12.1	.33	.19	.21	.19	.17	.20	.21	.50	.14	.09
142	12.5	.36	.19	.25	.23	.18	.22	.20	.53	.18	.07
143	12.5	.47	.23	.39	.36	.25	.35	.23	.56	.26	.05
144	14.8	.20	.09	.17	.15	.09	.09	.13	.29	.07	.08
145	15.5	.59	.40	.45	.46	.30	.39	.39	.61	.36	.16
171	10.3	.37	.19	.32	.23	.23	.31	.23	.48	.15	.06
172	11.0	.27	.10	.22	.18	.18	.12	.20	.43	.11	.04
173	15.5	.41	.23	.33	.36	.18	.29	.17	.52	.19	.07
174	12.8	.58	.30	.47	.48	.42	.38	.33	.58	.42	.18
175	16.2	.16	.07	.16	.09	.01	.08	.14	.32	.01	-.03
Mean	13.6	.41	.23	.32	.30	.21	.25	.28	.50	.22	.10
S.D.	2.0	.12	.09	.09	.11	.09	.08	.11	.10	.11	.04
n	30	30	30	30	30	30	30	30	30	30	30

GRE ADVANCED PSYCHOLOGY Form K-UGR2

Subscore 8 - Clinical and Abnormal Psychology

Item	Δ	BISERIAL CORRELATION									
		Total (n=200)	Personality (n=24)	Learning (n=36)	Measurement (n=25)	Developmental Psychology (n=15)	Social Psychology (n=23)	Physiological and Comparative Psychology (n=25)	Perception and Sensory Psychology (n=30)	Clinical and Abnormal Psychology (n=17)	Other (n=5)
3	< 6.0	-	-	-	-	-	-	-	-	-	-
8	< 6.0	-	-	-	-	-	-	-	-	-	-
19	9.8	.39	.34	.28	.26	.28	.31	.19	.22	.61	.13
21	8.1	.52	.42	.41	.36	.40	.41	.34	.31	.64	.14
38	12.0	.37	.22	.26	.31	.26	.24	.24	.22	.54	.15
51	13.0	.27	.21	.20	.21	.14	.12	.18	.18	.47	.09
80	10.3	.24	.17	.11	.21	.22	.12	.18	.14	.40	.02
81	11.6	.21	.13	.13	.14	.13	.14	.12	.17	.44	.13
82	12.4	.20	.10	.14	.13	.10	.12	.15	.14	.40	.03
83	8.9	.51	.32	.41	.42	.25	.39	.28	.44	.48	.18
84	10.7	.48	.33	.40	.41	.35	.35	.27	.31	.58	.09
85	11.9	.42	.34	.33	.37	.26	.27	.27	.25	.54	.15
149	10.2	.31	.24	.23	.20	.17	.29	.22	.18	.44	.13
154	15.7	.33	.19	.18	.26	.18	.20	.25	.18	.55	.07
180	12.2	.35	.16	.30	.30	.19	.23	.13	.29	.50	.04
181	15.1	.32	.17	.28	.26	.16	.22	.14	.26	.41	.08
182	17.2	.29	.24	.22	.23	.17	.19	.15	.20	.37	.00
Mean	11.2	.35	.24	.26	.27	.22	.24	.21	.23	.49	.10
S.D.	3.1	.10	.09	.10	.09	.08	.09	.06	.08	.08	.05
n	17	15	15	15	15	15	15	15	15	15	15

GRE ADVANCED PSYCHOLOGY Form K-UGR2

Subscore 9 - Other

Item	Δ	BISERIAL CORRELATION									
		Total (n=200)	Personality (n=24)	Learning (n=36)	Measurement (n=25)	Developmental Psychology (n=15)	Social Psychology (n=23)	Physiological and Comparative Psychology (n=25)	Perception and Sensory Psychology (n=30)	Clinical and Abnormal Psychology (n=17)	Other (n=5)
12	13.5	.20	.14	.14	.18	.13	.18	.07	.12	.11	.65
55	11.1	.07	.04	.04	.01	.03	.06	.00	.03	.02	.59
138	17.9	.35	.26	.29	.26	.22	.20	.18	.28	.17	.60
139	17.7	.27	.05	.18	.17	.16	.13	.33	.21	.18	.60
140	14.6	.38	.22	.35	.26	.25	.24	.27	.27	.25	.67
Mean	15.0	.25	.14	.20	.18	.16	.16	.17	.18	.15	.62
S.D.	2.6	.11	.09	.11	.09	.08	.06	.12	.09	.08	.03
n	5	5	5	5	5	5	5	5	5	5	5

APPENDIX I-B

GRE ADVANCED PSYCHOLOGY Form K-VGR1

Subscore		Δ	BISERIAL CORRELATION									
			Total	Personality (Subscore 1)	Learning (Subscore 2)	Measurement (Subscore 3)	Developmental Psychology (Subscore 4)	Social Psychology (Subscore 5)	Physiological and Comparative Psychology (Subscore 6)	Perception and Sensory Psychology (Subscore 7)	Clinical and Abnormal Psychology (Subscore 8)	Other (Subscore 9)
1.	Mean	14.2	.34	.45	.26	.23	.20	.20	.21	.22	.28	.08
	S.D.	2.5	.11	.11	.10	.09	.08	.08	.10	.09	.11	.07
	n	25	25	25	25	25	25	25	25	25	25	25
2.	Mean	13.0	.39	.25	.46	.25	.22	.23	.29	.29	.24	.10
	S.D.	2.5	.12	.10	.11	.09	.09	.09	.08	.09	.11	.07
	n	35	35	35	35	35	35	35	35	35	35	35
3.	Mean	13.8	.33	.21	.24	.43	.20	.19	.23	.23	.21	.05
	S.D.	2.1	.12	.09	.11	.11	.09	.09	.10	.10	.09	.07
	n	25	25	25	25	25	25	25	25	25	25	25
4.	Mean	13.1	.31	.20	.23	.21	.46	.21	.22	.23	.21	.06
	S.D.	2.5	.11	.10	.09	.11	.07	.09	.08	.08	.11	.06
	n	15	15	15	15	15	15	15	15	15	15	15
5.	Mean	12.4	.31	.19	.23	.21	.21	.47	.20	.22	.20	.04
	S.D.	3.1	.14	.11	.12	.11	.10	.11	.12	.11	.12	.05
	n	20	20	20	20	20	20	20	20	20	20	20
6.	Mean	13.2	.41	.22	.33	.27	.24	.22	.52	.33	.25	.09
	S.D.	2.7	.13	.10	.12	.09	.10	.10	.12	.12	.11	.05
	n	25	25	25	25	25	25	25	25	25	25	25
7.	Mean	13.4	.39	.22	.31	.25	.23	.23	.31	.49	.20	.08
	S.D.	2.0	.13	.11	.12	.08	.09	.07	.12	.13	.09	.07
	n	30	30	30	30	30	30	30	30	30	30	30
8.	Mean	11.8	.38	.31	.28	.25	.23	.23	.25	.23	.51	.09
	S.D.	2.7	.10	.10	.08	.07	.08	.09	.08	.09	.08	.06
	n	20	20	20	20	20	20	20	20	20	20	20
9.	Mean	16.2	.19	.14	.15	.11	.10	.08	.13	.12	.12	.60
	S.D.	1.3	.10	.10	.08	.07	.07	.09	.07	.09	.09	.05
	n	5	5	5	5	5	5	5	5	5	5	5

GRE ADVANCED PSYCHOLOGY Form K-VGR1

Subscore 1 - Personality

Item	Δ	BISERIAL CORRELATION									
		Total (n=200)	Personality (n=25)	Learning (n=35)	Measurement (n=25)	Developmental Psychology (n=15)	Social Psychology (n=20)	Physiological and Comparative Psychology (n=25)	Perception and Sensory Psychology (n=30)	Clinical and Abnormal Psychology (n=20)	Other (n=5)
8	10.5	.25	.43	.21	.13	.17	.18	.10	.08	.29	.00
13	12.0	.41	.62	.30	.25	.25	.23	.23	.25	.44	.19
36	12.3	.45	.59	.32	.31	.26	.24	.31	.24	.44	.11
55	13.6	.45	.52	.29	.30	.31	.31	.34	.29	.39	.08
58	14.8	.28	.45	.19	.16	.16	.08	.12	.16	.29	.18
59	13.1	.31	.47	.23	.16	.16	.15	.22	.18	.29	.12
80	8.3	.59	.55	.47	.45	.38	.42	.47	.45	.47	-.02
81	9.8	.44	.42	.35	.38	.31	.23	.33	.33	.29	.04
82	13.6	.25	.30	.26	.15	.11	.19	.14	.23	.10	.13
83	15.1	.30	.44	.24	.19	.16	.13	.19	.16	.31	.07
84	17.2	.20	.18	.14	.12	.09	.19	.17	.23	.09	.04
98	14.3	.36	.62	.27	.20	.23	.17	.21	.16	.33	.16
101	14.7	.34	.47	.22	.22	.25	.18	.24	.21	.30	.08
110	15.2	.45	.60	.31	.34	.27	.21	.27	.28	.41	.17
118	16.2	.30	.36	.22	.22	.22	.21	.19	.21	.21	.04
123	16.2	.43	.55	.38	.31	.19	.25	.26	.31	.30	.07
131	14.3	.51	.63	.43	.31	.26	.26	.31	.35	.37	.29
143	14.7	.37	.47	.27	.27	.18	.21	.21	.28	.25	.08
149	17.7	.26	.36	.24	.25	.08	.12	.13	.10	.18	.06
162	16.2	.19	.31	.16	.07	.10	.16	.09	.09	.21	.05
168	19.2	.25	.41	.10	.15	.20	.27	.05	.14	.17	-.06
184	14.3	.39	.51	.29	.22	.20	.21	.22	.24	.39	.13
185	15.6	.13	.34	.04	.11	.02	.01	.01	.06	.11	.08
186	15.7	.25	.35	.15	.20	.15	.16	.14	.19	.15	.01
187	9.8	.43	.41	.31	.34	.28	.27	.31	.35	.31	.02
Mean	14.2	.34	.45	.26	.23	.20	.20	.21	.22	.28	.08
S.D.	2.5	.11	.11	.10	.09	.08	.08	.10	.09	.11	.07
n	25	25	25	25	25	25	25	25	25	25	25

GRE ADVANCED PSYCHOLOGY Form K-VGR1

Subscore 2 - Learning

Item	Δ	BISERIAL CORRELATION									
		Total (n=200)	Personality (n=25)	Learning (n=35)	Measurement (n=25)	Developmental Psychology (n=15)	Social Psychology (n=20)	Physiological and Comparative Psychology (n=25)	Perception and Sensory Psychology (n=30)	Clinical and Abnormal Psychology (n=20)	Other (n=5)
1	9.0	.40	.22	.45	.27	.26	.21	.38	.29	.25	.02
10	10.2	.11	.04	.15	.06	.03	.02	.06	.12	.06	.00
23	10.0	.41	.29	.46	.24	.24	.29	.32	.37	.22	.07
25	11.0	.43	.29	.43	.31	.26	.27	.31	.28	.37	.06
26	10.2	.44	.26	.46	.27	.27	.28	.36	.41	.27	.01
28	11.0	.57	.43	.59	.40	.34	.38	.42	.39	.42	.15
30	9.6	.35	.20	.42	.24	.19	.25	.26	.27	.21	.05
34	11.7	.56	.44	.60	.39	.30	.32	.39	.50	.38	.17
38	11.5	.33	.22	.39	.22	.22	.19	.24	.26	.22	.05
43	12.1	.43	.32	.56	.24	.19	.22	.32	.33	.25	.21
46	11.8	.31	.19	.37	.19	.16	.15	.23	.25	.18	.00
54	13.9	.52	.38	.56	.32	.31	.34	.36	.40	.37	.24
65	14.3	.40	.27	.46	.28	.25	.23	.26	.25	.28	.08
85	9.9	.55	.35	.61	.42	.34	.33	.42	.39	.35	.08
86	12.9	.34	.22	.42	.26	.13	.16	.24	.26	.20	.14
87	13.7	.57	.45	.63	.37	.31	.29	.42	.44	.39	.17
88	13.8	.32	.19	.41	.25	.20	.25	.17	.27	.15	.04
89	17.7	.52	.36	.54	.40	.35	.38	.35	.40	.30	.17
90	12.9	.42	.24	.59	.24	.24	.27	.28	.32	.25	.11
91	13.3	.33	.22	.39	.22	.23	.17	.24	.25	.23	.02
92	15.2	.34	.22	.42	.20	.14	.18	.27	.26	.21	.26
112	12.8	.33	.15	.42	.27	.15	.22	.27	.23	.21	.08
124	17.2	.30	.18	.43	.15	.10	.18	.25	.20	.19	.21
126	16.2	.21	.12	.30	.14	.12	.13	.18	.14	.09	.06
127	13.5	.49	.30	.55	.29	.37	.29	.40	.36	.30	.10
130	17.9	.41	.26	.50	.20	.30	.16	.35	.29	.22	.07
146	12.5	.39	.27	.42	.26	.25	.23	.32	.21	.34	.09
152	13.6	.29	.18	.33	.20	.16	.14	.20	.24	.15	.04
158	12.0	.38	.33	.51	.23	.20	.24	.22	.20	.34	.16
164	13.7	.29	.13	.40	.19	.20	.15	.27	.25	.09	.02
170	16.5	.24	.12	.35	.08	.09	.09	.24	.26	.04	.02
171	13.8	.42	.23	.52	.30	.25	.23	.28	.32	.30	.12
172	9.5	.58	.40	.62	.38	.29	.36	.45	.45	.43	.13
173	10.7	.51	.29	.56	.37	.25	.33	.34	.37	.36	.09
174	18.4	.13	.06	.21	.05	.01	.07	.23	.08	-.07	.07
Mean	13.0	.39	.25	.46	.25	.22	.23	.29	.29	.24	.10
S.D.	2.5	.12	.10	.11	.09	.09	.09	.08	.09	.11	.07
n	35	35	35	35	35	35	35	35	35	35	35

GRE ADVANCED PSYCHOLOGY Form K-VGR1

Subscore 1 - Measurement

Item	Δ_o	BISERIAL CORRELATION									
		Total (n=200)	Personality (n=25)	Learning (n=35)	Measurement (n=25)	Developmental Psychology (n=15)	Social Psychology (n=20)	Physiological and Comparative Psychology (n=25)	Perception and Sensory Psychology (n=30)	Clinical and Abnormal Psychology (n=30)	Other (n=5)
11	11.2	.50	.27	.37	.59	.34	.32	.34	.39	.34	.06
14	11.4	.29	.20	.17	.39	.23	.22	.21	.19	.23	-.02
39	11.8	.21	.17	.16	.36	.05	.11	.13	.14	.17	.01
44	13.0	.30	.13	.24	.45	.20	.19	.20	.23	.11	-.05
56	13.4	.31	.27	.24	.37	.15	.14	.22	.20	.22	.10
61	13.5	.49	.36	.40	.45	.30	.26	.34	.38	.34	.26
68	13.5	.32	.18	.23	.43	.22	.18	.25	.22	.16	.00
70	14.8	.02	.02	-.06	.13	.03	.05	-.01	-.03	.00	-.08
71	8.1	.42	.25	.26	.51	.31	.33	.32	.30	.29	-.02
72	10.7	.40	.25	.29	.49	.26	.29	.30	.29	.24	.06
73	12.3	.54	.32	.40	.65	.33	.34	.42	.44	.35	.04
74	14.8	.41	.22	.33	.56	.23	.20	.30	.32	.23	.09
75	15.3	.26	.10	.17	.40	.13	.08	.25	.16	.19	.00
93	15.7	.09	.02	.05	.30	.07	.02	.06	.04	.01	.02
94	12.1	.44	.27	.33	.53	.25	.33	.35	.31	.30	.01
97	15.2	.28	.19	.22	.39	.08	.17	.16	.21	.20	.04
104	15.5	.36	.28	.26	.43	.24	.21	.23	.21	.21	.11
106	14.3	.40	.37	.34	.46	.19	.28	.24	.23	.27	.06
107	16.1	.43	.33	.34	.49	.22	.22	.31	.26	.33	.16
109	13.2	.20	.13	.12	.33	.11	.09	.12	.16	.11	-.04
114	14.9	.27	.15	.23	.39	.14	.14	.15	.16	.22	.14
116	16.1	.15	.07	.12	.28	.11	.06	.07	.09	.08	.08
121	16.5	.40	.24	.30	.52	.25	.23	.24	.27	.26	.07
125	17.3	.34	.23	.31	.42	.32	.16	.19	.24	.15	.04
135	15.5	.38	.21	.30	.49	.19	.15	.27	.31	.20	.12
Mean	13.8	.33	.21	.24	.43	.20	.19	.23	.23	.21	.05
S.D.	2.1	.12	.09	.11	.11	.09	.09	.10	.10	.09	.07
n	25	25	25	25	25	25	25	25	25	25	25

GRE ADVANCED PSYCHOLOGY Form K-VGR1

Subscore 4 - Developmental Psychology

Item	Δ	BISERIAL CORRELATION									
		Total (n=200)	Personality (n=25)	Learning (n=35)	Measurement (n=25)	Developmental Psychology (n=15)	Social Psychology (n=20)	Physiological and Comparative Psychology (n=25)	Perception and Sensory Psychology (n=30)	Clinical and Abnormal Psychology (n=30)	Other (n=5)
7	9.2	.41	.32	.27	.30	.50	.32	.25	.28	.36	.08
16	10.3	.25	.18	.19	.15	.47	.12	.16	.19	.15	.01
31	10.4	.52	.37	.40	.45	.55	.35	.34	.38	.38	.17
47	11.5	.41	.25	.35	.24	.52	.31	.32	.35	.21	.02
49	11.0	.42	.28	.32	.30	.55	.27	.28	.28	.28	.01
62	13.7	.22	.12	.13	.16	.41	.14	.18	.16	.15	.00
67	13.7	.31	.20	.20	.24	.45	.17	.21	.22	.22	.05
103	13.7	.20	.10	.15	.15	.44	.13	.14	.13	.14	.02
129	17.3	.23	.09	.20	.11	.43	.15	.21	.20	.10	.10
136	17.3	.42	.33	.29	.31	.51	.23	.31	.30	.34	.13
138	17.0	.36	.28	.28	.28	.38	.37	.23	.18	.28	.07
147	14.3	.10	.02	.07	.01	.36	.10	.07	.08	.03	.15
153	13.2	.36	.26	.25	.22	.56	.18	.27	.29	.26	.10
182	10.6	.14	.07	.10	.07	.30	.14	.09	.13	.04	-.01
183	13.3	.31	.17	.23	.22	.50	.19	.25	.23	.19	.01
Mean	13.1	.31	.20	.23	.21	.46	.21	.22	.23	.21	.06
S.D.	2.5	.11	.10	.09	.11	.07	.09	.08	.08	.11	.06
n	15	15	15	15	15	15	15	15	15	15	15

GRE ADVANCED PSYCHOLOGY Form K-VGR1

Subscore 5 - Social Psychology

Items	Δ	BISERIAL CORRELATION									
		Total (n=200)	Personality (n=25)	Learning (n=35)	Measurement (n=25)	Developmental Psychology (n=15)	Social Psychology (n=20)	Physiological and Comparative Psychology (n=25)	Perception and Sensory Psychology (n=30)	Clinical and Abnormal Psychology (n=20)	Other (n=5)
5	8.5	.50	.28	.39	.36	.37	.56	.38	.41	.27	.05
12	8.7	.49	.31	.37	.41	.29	.55	.37	.35	.35	.00
17	9.6	.37	.23	.28	.23	.30	.55	.23	.30	.26	.00
19	9.9	.40	.24	.23	.30	.23	.56	.23	.33	.27	.02
35	10.3	.27	.23	.21	.20	.14	.41	.22	.12	.26	.04
95	8.3	.22	.08	.17	.19	.16	.36	.13	.15	.11	-.02
96	14.8	.08	.00	.00	.04	.07	.29	-.02	.10	.03	.03
141	15.3	.11	.02	.10	.04	.08	.32	.10	.08	.01	.04
142	14.0	.44	.34	.32	.29	.33	.56	.33	.28	.32	.14
148	16.0	.39	.24	.31	.28	.2[illegible]	.57	.27	.30	.23	.09
154	14.9	.33	.19	.23	.22	.22	.53	.22	.22	.23	.05
160	17.0	.10	.08	.02	.08	.03	.33	.00	.06	.09	.02
166	8.3	.50	.32	.42	.29	.32	.64	.37	.37	.38	.08
167	11.4	.50	.32	.39	.35	.32	.62	.34	.35	.36	.02
179	16.4	.22	.17	.16	.15	.12	.37	.09	.13	.15	.04
180	9.5	.44	.28	.32	.29	.34	.49	.33	.38	.33	.05
181	11.4	.14	.06	.08	.06	.15	.41	.07	.11	.01	.02
190	13.6	.14	.09	.10	.11	.12	.25	.06	.10	.09	-.01
191	16.6	.34	.28	.29	.19	.15	.52	.21	.20	.21	.20
192	14.3	.22	.11	.12	.19	.19	.44	.13	.14	.12	.02
Mean	12.4	.31	.19	.23	.21	.21	.47	.20	.22	.20	.04
S.D.	3.1	.14	.11	.12	.11	.10	.11	.12	.11	.12	.05
n	20	20	20	20	20	20	20	20	20	20	20

GRE ADVANCED PSYCHOLOGY Form K-VGR1

Subscore 6 - Physiological and Comparative Psychology

Items	%	BISERIAL CORRELATION									
		Total (n=200)	Personality (n=25)	Learning (n=35)	Measurement (n=25)	Developmental Psychology (n=15)	Social Psychology (n=20)	Physiological and Comparative Psychology (n=25)	Perception and Sensory Psychology (n=30)	Clinical and Abnormal Psychology (n=20)	Other (n=5)
4	9.9	.59	.35	.47	.40	.38	.41	.63	.43	.45	.15
15	9.6	.35	.16	.31	.27	.27	.27	.29	.23	.22	-.05
40	12.7	.43	.27	.34	.30	.20	.17	.56	.36	.22	.11
45	11.9	.47	.22	.39	.27	.28	.21	.61	.47	.26	.13
76	11.7	.36	.21	.31	.23	.16	.21	.47	.27	.19	.10
77	7.4	.58	.44	.53	.44	.36	.36	.61	.42	.38	.08
78	10.6	.60	.44	.53	.37	.38	.40	.62	.42	.44	.14
79	15.0	.56	.33	.49	.36	.34	.29	.66	.46	.37	.16
99	13.8	.16	.04	.14	.12	.09	.12	.30	.09	.09	-.01
113	15.1	.35	.15	.24	.26	.18	.15	.50	.33	.16	.03
119	15.3	.37	.13	.27	.23	.18	.14	.54	.36	.14	.15
122	15.5	.39	.18	.33	.23	.20	.20	.57	.34	.18	.11
137	16.2	.23	.09	.10	.11	.08	.08	.47	.26	.02	.04
144	8.7	.52	.30	.43	.32	.37	.25	.62	.45	.33	.11
145	12.5	.50	.28	.41	.33	.35	.27	.61	.40	.29	.09
150	13.6	.48	.28	.35	.29	.28	.22	.56	.52	.20	.18
156	8.3	.43	.29	.27	.27	.30	.37	.43	.33	.43	.06
163	16.4	.43	.19	.34	.26	.26	.15	.62	.40	.22	.07
169	15.0	.45	.23	.34	.32	.30	.23	.53	.32	.34	.13
178	17.7	.24	.08	.29	.16	.05	.15	.36	.16	.15	.10
193	16.5	.44	.21	.37	.31	.24	.21	.58	.34	.27	.09
194	13.1	.45	.26	.31	.34	.29	.26	.57	.38	.27	.08
195	15.1	.17	.12	.06	.14	.06	.09	.27	.11	.15	.01
196	14.6	.15	.14	.14	.07	.08	.04	.30	.06	.11	.05
197	13.6	.49	.22	.39	.33	.30	.28	.63	.45	.26	.06
Mean	13.2	.41	.22	.33	.27	.24	.22	.52	.33	.25	.09
S.D.	2.7	.13	.10	.12	.09	.10	.10	.12	.12	.11	.05
n	25	25	25	25	25	25	25	25	25	25	25

GRE ADVANCED PSYCHOLOGY Form K-VGR1

Subscore 7 - Perception and Sensory Psychology

Items	Δ	BISERIAL CORRELATION									
		Total (n=200)	Personality (n=25)	Learning (n=35)	Measurement (n=25)	Developmental Psychology (n=15)	Social Psychology (n=20)	Physiological and Comparative Psychology (n=25)	Perception and Sensory Psychology (n=30)	Clinical and Abnormal Psychology (n=20)	Other (n=5)
2	9.9	.52	.26	.41	.30	.23	.26	.48	.69	.26	.14
9	9.9	.24	.16	.14	.16	.14	.18	.13	.36	.13	-.05
22	10.3	.46	.28	.38	.26	.31	.26	.39	.56	.27	.01
24	11.1	.53	.31	.44	.34	.36	.29	.42	.61	.28	.05
32	11.9	.37	.15	.25	.29	.21	.24	.31	.50	.17	-.03
41	12.0	.30	.13	.19	.22	.13	.18	.22	.41	.13	.03
50	13.0	.48	.34	.40	.31	.29	.29	.39	.52	.27	.12
52	11.7	.55	.32	.46	.30	.33	.30	.47	.66	.31	.13
53	13.2	.50	.32	.42	.32	.27	.27	.39	.57	.31	.17
57	13.6	.45	.31	.35	.27	.34	.28	.32	.50	.30	.07
60	13.2	.41	.19	.34	.27	.27	.31	.29	.45	.26	.07
63	14.1	.50	.26	.38	.34	.26	.24	.42	.61	.24	.12
64	15.5	.37	.23	.25	.23	.24	.22	.27	.50	.21	.08
66	13.7	.31	.14	.21	.19	.17	.16	.21	.46	.15	.11
69	14.0	.37	.20	.26	.28	.19	.19	.35	.45	.16	.12
100	13.5	.57	.28	.43	.35	.32	.32	.52	.70	.30	.16
105	14.9	43	.20	.38	.32	.25	.22	.35	.46	.27	.12
108	13.4	.48	.38	.39	.25	.32	.27	.34	.52	.30	.12
111	14.5	.31	.17	.27	.15	.15	.17	.22	.46	.15	.03
115	14.9	.55	.31	.46	.36	.32	.28	.46	.62	.28	.15
132	16.1	.25	.12	.20	.21	.20	.17	.17	.35	.09	.06
133	15.3	.25	.17	.18	.14	.15	.17	.25	.31	.11	.03
134	15.6	.21	.11	.16	.14	.09	.06	.17	.36	.07	.05
139	14.1	.57	.38	.42	.40	.35	.31	.48	.65	.28	.18
140	16.8	.30	.16	.21	.20	.18	.28	.17	.38	.17	.04
151	11.2	.44	.20	.34	.28	.22	.30	.40	.61	.19	.08
157	17.9	-.04	-.16	-.05	-.03	-.09	.04	.00	.12	-.11	-.10
175	13.3	.39	.30	.35	.27	.20	.18	.26	.42	.21	.10
176	11.7	.45	.24	.34	.26	.32	.26	.36	.58	.23	.15
177	12.0	.28	.14	.25	.23	.18	.19	.17	.37	.15	-.03
Mean	13.4	.39	.22	.31	.25	.23	.23	.31	.49	.20	08
S.D.	2.0	.13	.11	.12	.08	.09	.07	.12	.13	.09	.07
n	30	30	30	30	30	30	30	30	30	30	30

GRE ADVANCED PSYCHOLOGY Form K-VGR1

Subscore 8 - Clinical and Abnormal Psychology

		BISERIAL CORRELATION									
Items	Δ	Total (n=200)	Personality (n=25)	Learning (n=35)	Measurement (n=25)	Developmental Psychology (n=15)	Social Psychology (n=20)	Physiological and Comparative Psychology (n=25)	Perception and Sensory Psychology (n=30)	Clinical and Abnormal Psychology (n=20)	Other (n=5)
3	8.7	.42	.35	.32	.23	.24	.28	.28	.26	.56	.14
6	8.5	.43	.32	.28	.22	.31	.28	.27	.32	.59	.16
18	9.0	.32	.24	.24	.21	.22	.24	.27	.18	.47	.01
20	11.7	.42	.36	.30	.24	.27	.22	.28	.28	.57	.09
21	13.1	.35	.35	.29	.24	.21	.24	.20	.19	.47	.05
27	10.0	.37	.29	.26	.26	.27	.25	.22	.21	.54	.09
29	10.0	.24	.23	.18	.14	.14	.15	.18	.08	.44	.03
33	10.2	.52	.40	.42	.36	.32	.31	.36	.33	.59	.11
37	12.5	.40	.39	.28	.30	.25	.17	.24	.23	.57	.16
42	11.7	.35	.34	.18	.22	.21	.23	.23	.21	.55	.09
48	11.5	.33	.36	.22	.21	.21	.27	.18	.17	.52	.09
51	12.8	.39	.24	.35	.28	.20	.25	.26	.25	.45	.16
102	14.7	.14	.08	.08	.15	.08	-.02	.05	.07	.30	.02
117	15.2	.40	.46	.25	.27	.26	.24	.22	.24	.56	.15
120	14.8	.44	.34	.35	.31	.22	.28	.29	.29	.53	.09
128	18.4	.25	.15	.20	.21	.07	.07	.21	.21	.37	.20
155	8.7	.56	.39	.40	.40	.39	.40	.38	.43	.59	.02
161	8.9	.53	.44	.41	.36	.35	.39	.42	.32	.57	.06
188	11.3	.41	.34	.32	.31	.20	.23	.30	.27	.52	.02
189	14.8	.25	.16	.28	.16	.09	.13	.18	.10	.42	-.03
Mean	11.8	.38	.31	.28	.25	.23	.23	.25	.23	.51	.09
S.D.	2.7	.10	.10	.08	.07	.08	.09	.08	.09	.08	.06
n	20	20	20	20	20	20	20	20	20	20	20

GRE ADVANCED PSYCHOLOGY Form K-VGR1

Subscore 9 - Other

Item	Δ	BISERIAL CORRELATION									
		Total (n=200)	Personality (n=25)	Learning (n=35)	Measurement (n=25)	Developmental Psychology (n=15)	Social Psychology (n=20)	Physiological and Comparative Psychology (n=25)	Perception and Sensory Psychology (n=30)	Clinical and Abnormal Psychology (n=20)	Other (n=5)
159	17.0	.20	.12	.13	.15	.13	.07	.18	.10	.14	.58
165	16.5	.09	.04	.09	.03	.11	.09	.06	.02	.06	.59
198	17.3	.38	.34	.30	.23	.20	.23	.22	.28	.29	.64
199	16.5	.17	.10	.15	.07	.06	.06	.13	.16	.04	.53
200	13.7	.10	.11	.07	.07	.00	-.05	.04	.05	.08	.67
Mean	16.2	.19	.14	.15	.11	.10	.08	.13	.12	.12	.60
S.D.	1.3	.10	.10	.08	.07	.07	.09	.07	.09	.09	.05
n	5	5	5	5	5	5	5	5	5	5	5

APPENDIX II-A

GRE Advanced Psychology, Form K-UGR2

Summary Statistics

SCORE	CORRELATION MATRIX (Sample N = 915)													Mean	S.D.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)		
(1) Personality		.494	.556	.434	.548	.351	.458	.451	.185	.693	.538	.812	.541	6.44	3.57
(2) Learning Theory	.494		.681	.490	.559	.456	.642	.504	.277	.854	.874	.655	.681	15.18	7.11
(3) Measurement	.556	.681		.431	.575	.414	.599	.541	.236	.822	.706	.673	.971	13.29	5.10
(4) Developmental	.434	.490	.431		.440	.351	.432	.419	.205	.626	.523	.709	.435	7.89	2.73
(5) Social	.548	.559	.575	.440		.351	.505	.462	.229	.733	.614	.790	.573	9.45	3.97
(6) Physiological	.351	.456	.414	.351	.351		.553	.393	.191	.658	.735	.470	.407	6.90	4.54
(7) Perception	.458	.642	.599	.432	.505	.553		.458	.228	.816	.879	.595	.586	11.08	6.08
(8) Clinical	.451	.504	.541	.419	.462	.393	.458		.205	.657	.553	.738	.539	9.72	3.04
(9) Other	.185	.277	.236	.205	.229	.191	.228	.205		.337	.279	.278	.425	1.42	1.25
(10) Total Score	.693	.854	.822	.626	.733	.658	.816	.675	.337		.947	.878	.820	80.30	27.69
(11) Experimental	.538	.874	.706	.523	.614	.735	.879	.553	.279	.947		.708	.697	34.87	15.61
(12) Social	.812	.655	.673	.709	.790	.470	.595	.738	.278	.878	.708		.666	31.43	9.70
(13) Miscellaneous	.541	.681	.971	.435	.573	.407	.586	.539	.425	.820	.697	.666		14.27	5.36
RELIABILITY	.532	.798	.753	.454	.620	.688	.782	.554	.284	.930	.891	.795	.743		
NUMBER OF ITEMS	24	36	25	15	23	25	30	17	5	200	95	76	29		

NOTE: Variables (1) through (9) are mutually exclusive; variables (11) through (13) are mutually exclusive; the underscored correlations are spuriously high because there is some overlap in items in the two variables. See Appendix II-C for summary of item overlap among the variables.

APPENDIX II-B

GRE Advanced Psychology, Form K-VGR1

Summary Statistics

SCORE	CORRELATION MATRIX (Sample N = 905)													Mean	S.D.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)		
(1) Personality		.550	.490	.416	.415	.435	.476	.595	.208	.729	.567	.825	.512	7.21	4.37
(2) Learning Theory	.550		.559	.476	.495	.620	.637	.542	.217	.848	.882	.672	.577	14.89	6.33
(3) Measurement	.490	.559		.448	.444	.522	.526	.476	.164	.745	.618	.604	.969	7.90	4.39
(4) Developmental	.416	.476	.448		.435	.454	.474	.429	.124	.650	.539	.692	.452	6.01	2.83
(5) Social	.415	.495	.444	.435		.421	.474	.441	.106	.659	.537	.724	.443	9.36	3.33
(6) Physiological	.435	.620	.522	.454	.421		.630	.464	.190	.776	.837	.571	.538	10.12	4.71
(7) Perception	.476	.637	.526	.474	.474	.630		.431	.166	.808	.878	.597	.537	11.41	5.99
(8) Clinical	.595	.542	.476	.429	.441	.464	.431		.167	.716	.554	.819	.491	10.56	3.89
(9) Other	.208	.217	.164	.124	.106	.190	.166	.167		.266	.220	.202	.383	0.53	1.17
(10) Total Score	.729	.848	.745	.650	.659	.776	.808	.716	.266		.937	.895	.765	76.95	27.50
(11) Experimental	.567	.882	.618	.539	.537	.837	.878	.554	.220	.937		.711	.636	36.13	14.82
(12) Social	.825	.672	.604	.692	.724	.571	.597	.819	.202	.895	.711		.619	32.73	11.17
(13) Miscellaneous	.512	.577	.969	.452	.443	.538	.537	.491	.383	.765	.636	.619		8.34	4.69
RELIABILITY	.661	.769	.634	.477	.568	.732	.773	.665	.224	.930	.893	.833	.626		
NUMBER OF ITEMS	25	35	25	15	20	25	30	20	5	200	90	80	30		

NOTE: Variables (1) through (9) are mutually exclusive; variables (11) through (13) are mutually exclusive; the underscored correlations are spuriously high because there is some overlap in items in the two variables. See Appendix II-C for summary of item overlap among the variables.

APPENDIX II-C

GRE Advanced Psychology

Summary of Item Overlap Among Variables

SCORE	Number of Items							
	K-UGR2				K-VGR1			
	(10) Total	(11) Exp.	(12) Soc.	(13) Misc.	(10) Total	(11) Exp.	(12) Soc.	(13) Misc.
(1) Personality	24		24		25		25	
(2) Learning Theory	36	36			35	35		
(3) Measurement	25		1	24	25			25
(4) Developmental	15		15		15		15	
(5) Social	23	4	19		20		20	
(6) Physiological	25	25			25	25		
(7) Perception	30	30			30	30		
(8) Clinical	17		17		20		20	
(9) Other	5			5	5			5
(10) Total	200	95	76	29	200	90	80	30

Note that in Form K-UGR2 four items about an experiment in Social Psychology were included in the reported Experimental Psychology subscore and that one measurement item was included in the reported Social Psychology subscore.

APPENDIX III

In Lord's theory a difference is treated as a real difference only if the absolute value of the difference is greater than the standard error of test x plus the standard error of test y. As an approximation it is assumed here that the two subtests have equal standard errors of measurement. According to Lord (1958) "moderate deviations from this assumption will cause only minor differences in the results obtained.

A difference, d, is to be treated as a real difference only if

(2) $$|d| \geq 2\ S.E._x$$

where $|d|$ represents the absolute value of the difference. Since the errors of measurement in tests x and y are presumably independent,

(3) $$S.E._d \sqrt{SE_x^2 + SE_y^2} = \sqrt{2}\ SE_x$$

By the usual formula for any standard error of measurement $SE_c = \sigma_d \sqrt{1 - r_{dd}}$; or, expressing d in standard measure so that $d = 1$,

(4) $$SE_d = \sqrt{1 - r_{dd}}$$

It is seen from (2), (3), and (4) that the difference will be treated as a real difference only if

(5) $$|d| \geq \sqrt{2(1 - r_{dd})}$$

The cutting point given by the right side of (5) will be denoted by K.

Consider now the bivariate frequency distribution between the observed difference, d, and the true difference, Δ. It is well known that the correlation between d and Δ is equal to $\sqrt{r_{dd}}$. It will be assumed here that the bivariate distribution is normal.

The proportion of cases lying above $d = +K$ in the bivariate distribution is the proportion of examinees for whom the judgment $\Delta > 0$ is made. The proportion of these that actually lie above $\Delta = 0$ is the proportion of judgments correctly made. Similar statements hold for the judgment $\Delta < 0$.

Once the reliability of the difference score is known, these proportions are readily determined from tables of the bivariate normal frequency distribution."

Some illustrative results are given in Table 4, on page 10 of the text. The last two columns represent both judgments of $\Delta > 0$ and judgments of $\Delta < 0$.

APPENDIX IV-A

GRE Advanced Psychology, Form K-UGR2

Item/Factor Correlations in Rank Order for Factor I

Item Rank	Item Number	Item/Factor Correlation I	II	III	Communality	Classification of Item: Experimental	Social	Miscellaneous	Personality	Learning	Measurement	Development	Social	Physiological	Perception	Clinical	Other
1	151	.462	.220	.362	.222			x			x						
2	166	.461	.178	.357	.227			x			x						
3	135	.456	.307	.461	.255			x			x						
4	134	.444	.241	.330	.200			x			x						
5	34	.442	.313	.379	.214	x				x							
6	68	.439	.201	.289	.194			x			x						
7	131	.433	.283	.478	.254			x			x						
8	24	.433	.345	.428	.233	x				x							
9	76	.427	.267	.182	.206		x		x								
10	66	.421	.298	.284	.186		x		x								
11	16	.420	.274	.385	.198	x				x							
12	47	.414	.521	.370	.301	x								x			
13	7	.409	.351	.350	.198	x									x		
14	26	.404	.208	.382	.190	x				x							
15	198	.402	.200	.236	.163			x			x						
16	169	.399	.192	.393	.194	x							x				
17	19	.399	.175	.085	.212		x									x	
18	18	.396	.284	.282	.165	x									x		
19	21	.392	.187	.191	.161		x									x	
20	70	.388	.368	.339	.192	x								x			
21	85	.387	.193	.235	.150		x									x	
22	44	.385	.272	.374	.176	x				x							
23	170	.381	.178	.417	.202	x							x				
24	31	.373	.253	.285	.145	x				x							
25	50	.372	.203	.199	.143		x						x				
26	71	.361	.126	.126	.152		x		x								
27	43	.355	.236	.259	.130	x				x							
28	49	.352	.151	.191	.128		x					x					
29	116	.351	.448	.430	.257	x									x		
30	84	.350	.161	.349	.153		x									x	
31	196	.349	.241	.386	.166	x				x							
32	8	.349	.159	.204	.123		x									x	
33	60	.347	.141	.230	.123		x		x								
34	13	.346	.253	.211	.129	x				x							
35	33	.344	.157	.272	.124		x						x				
36	174	.342	.300	.488	.242	x									x		
37	130	.339	.266	.431	.193			x			x						
38	140	.338	.229	.158	.128			x									x
39	37	.336	.087	.251	.129			x			x						
40	145	.336	.354	.431	.212	x									x		
41	28	.334	.134	.238	.115		x					x					
42	83	.332	.207	.296	.122		x									x	
43	72	.329	.196	.221	.109		x		x								
44	153	.329	.248	.364	.149	x				x							
45	59	.329	.189	.207	.109			x			x						
46	190	.324	.321	.287	.140		x					x					
47	89	.323	.047	.184	.125		x						x				
48	146	.312	.460	.166	.239	x								x			
49	194	.311	.234	.358	.140	x				x							
50	136	.311	.173	.254	.101			x			x						

APPENDIX IV-A

GRE Advanced Psychology, Form K-UGR2

Item/Factor Correlations in Rank Order for Factor II

Item Rank	Item Number	Item/Factor Correlation I	II	III	Communality	Classification of Item: Experimental	Social	Miscellaneous	Personality	Learning	Measurement	Development	Social	Physiological	Perception	Clinical	Other
1	113	.238	.529	.259	.282	x									x		
2	47	.414	.521	.370	.301	x								x			
3	127	.211	.520	.310	.288	x								x			
4	126	.176	.508	.168	.272	x								x			
5	111	.254	.484	.184	.241	x									x		
6	115	.271	.474	.313	.233	x									x		
7	146	.312	.460	.166	.239	x								x			
8	116	.351	.448	.430	.257	x									x		
9	25	.294	.430	.303	.196	x									x		
10	42	.245	.418	.167	.181	x								x			
11	45	.301	.390	.166	.178	x									x		
12	67	.251	.387	.189	.155	x								x			
13	152	.306	.387	.289	.168	x								x			
14	124	.242	.383	.264	.154	x								x			
15	64	.095	.379	.226	.173	x								x			
16	160	.267	.374	.206	.148	x								x			
17	70	.388	.368	.339	.192	x								x			
18	117	.249	.362	.395	.196	x									x		
19	10	.219	.357	.193	.129	x								x			
20	145	.336	.354	.431	.212	x									x		
21	125	.263	.351	.126	.148	x								x			
22	7	.409	.351	.350	.198	x									x		
23	35	.275	.346	.085	.168	x									x		
24	24	.433	.345	.428	.233	x				x							
25	187	.149	.334	.147	.113	x								x			
26	58	.072	.327	.117	.120	x								x			
27	128	.062	.321	.123	.119	x								x			
28	190	.324	.321	.287	.140		x					x					
29	34	.442	.313	.379	.214	x				x							
30	135	.456	.307	.461	.255			x			x						
31	174	.342	.300	.488	.242	x									x		
32	93	.249	.300	.253	.107		x				x						
33	66	.421	.298	.284	.186		x		x								
34	114	.235	.290	.244	.099	x									x		
35	18	.396	.284	.282	.165	x									x		
36	131	.433	.283	.478	.254			x			x						
37	16	.420	.274	.385	.198	x				x							
38	106	.259	.272	.272	.103	x				x							
39	44	.385	.272	.374	.176	x				x							
40	141	.197	.270	.184	.078	x									x		
41	36	.309	.269	.416	.179	x									x		
42	164	.048	.269	.082	.084	x								x			
43	76	.427	.267	.182	.206		x		x								
44	130	.339	.266	.431	.193			x			x						
45	172	.138	.260	.173	.071	x									x		
46	147	.300	.258	.267	.109	x				x							
47	31	.373	.253	.285	.145	x				x							
48	13	.346	.253	.211	.129	x				x							
49	143	.289	.249	.381	.151	x									x		
50	108	.297	.248	.237	.101	x				x							

APPENDIX IV-A

GRE Advanced Psychology, Form K-UGR2

Item/Factor Correlations in Rank Order for Communality

Item Rank	Item Number	Item/Factor Correlation I	II	III	Communality	Classification of Item: Experimental	Social	Miscellaneous	Personality	Learning	Measurement	Development	Social	Physiological	Perception	Clinical	Other
1	195	.307	.226	.377	.343	x				x							
2	47	.414	.521	.370	.301	x								x			
3	127	.211	.520	.310	.288	x								x			
4	113	.238	.529	.259	.282	x									x		
5	193	.290	.231	.526	.282	x				x							
6	126	.176	.508	.168	.272	x								x			
7	116	.351	.448	.430	.257	x									x		
8	135	.456	.307	.461	.255			x			x						
9	131	.433	.283	.478	.254			x			x						
10	102	.238	.212	.486	.247	x				x							
11	174	.342	.300	.488	.242	x									x		
12	111	.254	.484	.184	.241	x									x		
13	146	.312	.460	.166	.239	x								x			
14	24	.433	.345	.428	.233	x				x							
15	115	.271	.474	.313	.233	x									x		
16	101	.268	.201	.476	.231	x				x							
17	166	.461	.178	.357	.227			x			x						
18	151	.462	.220	.362	.222			x			x						
19	34	.442	.313	.379	.214	x				x							
20	19	.399	.175	.085	.212		x									x	
21	145	.336	.354	.431	.212	x									x		
22	76	.427	.267	.182	.206		x		x								
23	170	.381	.178	.417	.202	x							x				
24	134	.444	.241	.330	.200			x			x						
25	16	.420	.274	.385	.198	x				x							
26	7	.409	.351	.350	.198	x									x		
27	117	.249	.362	.395	.196	x									x		
28	25	.294	.430	.303	.196	x									x		
29	169	.399	.192	.393	.194	x							x				
30	68	.439	.201	.289	.194			x			x						
31	130	.339	.266	.431	.193			x			x						
32	70	.388	.368	.339	.192	x								x			
33	26	.404	.208	.382	.190	x				x							
34	118	.154	.225	.403	.188	x									x		
35	66	.421	.298	.284	.186		x		x								
36	42	.245	.418	.167	.181	x								x			
37	36	.309	.269	.416	.179	x									x		
38	45	.301	.390	.166	.178	x									x		
39	44	.385	.272	.374	.176	x				x							
40	64	.095	.379	.226	.173	x								x			
41	35	.275	.346	.085	.168	x									x		
42	152	.306	.387	.289	.168	x								x			
43	165	.254	.196	.408	.167			x			x						
44	196	.349	.241	.386	.166	x				x							
45	18	.396	.284	.282	.165	x									x		
46	198	.402	.200	.236	.163			x			x						
47	21	.392	.187	.191	.161		x									x	
48	173	.176	.168	.387	.160	x									x		
49	67	.251	.387	.189	.155	x								x			
50	124	.242	.383	.264	.154	x								x			

APPENDIX IV-A

GRE Advanced Psychology, Form K-UGR2

Item/Factor Correlations in Rank Order for Factor III

Item Rank	Item Number	Item/Factor Correlation I	II	III	Communality	Classification of Item: Experimental	Social	Miscellaneous	Personality	Learning	Measurement	Development	Social	Physiological	Perception	Clinical	Other
1	195	.307	.226	.577	.343	x				x							
2	193	.290	.231	.526	.282	x				x							
3	174	.342	.300	.488	.242	x									x		
4	102	.238	.212	.486	.247	x				x							
5	131	.433	.283	.478	.254			x			x						
6	101	.268	.201	.476	.231	x				x							
7	135	.456	.307	.461	.255			x			x						
8	145	.336	.354	.431	.212	x									x		
9	130	.339	.266	.431	.193			x			x						
10	116	.351	.448	.430	.257	x									x		
11	24	.433	.345	.428	.233	x				x							
12	170	.381	.178	.417	.202	x							x				
13	36	.309	.269	.416	.179	x									x		
14	165	.254	.196	.408	.167			x			x						
15	118	.154	.225	.403	.188	x									x		
16	117	.249	.362	.395	.196	x									x		
17	169	.399	.192	.393	.194	x							x				
18	173	.176	.168	.387	.160	x									x		
19	196	.349	.241	.386	.166	x				x							
20	16	.420	.274	.385	.198	x				x							
21	26	.404	.208	.382	.190	x				x							
22	143	.289	.249	.381	.151	x									x		
23	34	.442	.313	.379	.214	x				x							
24	167	.305	.186	.378	.150	x							x				
25	44	.385	.272	.374	.176	x				x							
26	47	.414	.521	.370	.301	x								x			
27	153	.329	.248	.364	.149	x				x							
28	151	.462	.220	.362	.222			x			x						
29	30	.263	.214	.362	.133	x									x		
30	194	.311	.234	.358	.140	x				x							
31	166	.461	.178	.357	.227			x			x						
32	197	.283	.153	.357	.135			x			x						
33	200	.275	.181	.356	.130			x			x						
34	7	.409	.351	.350	.198	x									x		
35	84	.350	.161	.349	.153		x									x	
36	74	.282	.197	.344	.124		x		x								
37	70	.388	.368	.339	.192	x								x			
38	20	.230	.158	.330	.109	x				x							
39	134	.444	.241	.330	.200			x			x						
40	137	.263	.166	.327	.112			x			x						
41	115	.271	.474	.313	.233	x									x		
42	103	.277	.066	.312	.127	x				x							
43	199	.179	.099	.312	.102			x			x						
44	180	.212	.150	.312	.098		x									x	
45	127	.211	.520	.310	.288	x								x			
46	120	.084	.176	.307	.123	x									x		
47	40	.286	.158	.307	.108	x				x							
48	25	.294	.430	.303	.196	x									x		
49	83	.332	.207	.296	.122		x									x	
50	181	.142	.116	.293	.090		x									x	

APPENDIX IV-B

GRE Advanced Psychology, Form K-VGR1

Item/Factor Correlations in Rank Order for Factor I

Item Rank	Item Number	Item/Factor Correlation I	II	III	Communality	Classification of Item: Experimental	Social	Miscellaneous	Personality	Learning	Measurement	Development	Social	Physiological	Perception	Clinical	Other
1	100	.532	.261	.317	.285	x									x		
2	52	.499	.314	.300	.251	x									x		
3	139	.497	.326	.306	.252	x									x		
4	115	.477	.274	.266	.229	x									x		
5	2	.477	.200	.266	.233	x									x		
6	197	.465	.201	.357	.236	x								x			
7	45	.456	.205	.279	.212	x								x			
8	53	.451	.301	.265	.209	x									x		
9	151	.435	.164	.257	.197	x									x		
10	150	.427	.235	.221	.185	x								x			
11	63	.426	.222	.252	.181	x									x		
12	87	.421	.470	.277	.265	x				x							
13	79	.420	.340	.284	.194	x								x			
14	24	.418	.237	.391	.208	x									x		
15	73	.410	.239	.462	.247			x			x						
16	34	.401	.437	.323	.229	x				x							
17	176	.384	.231	.281	.151	x									x		
18	145	.379	.226	.372	.178	x								x			
19	119	.377	.081	.159	.166	x								x			
20	54	.376	.348	.267	.170	x				x							
21	50	.372	.307	.278	.155	x									x		
22	85	.361	.329	.363	.173	x				x							
23	78	.356	.431	.425	.238	x								x			
24	90	.354	.288	.227	.139	x				x							
25	43	.353	.400	.150	.217	x				x							
26	194	.351	.204	.326	.145	x								x			
27	173	.349	.342	.299	.157	x				x							
28	144	.347	.244	.309	.137	x								x			
29	105	.347	.203	.224	.121	x									x		
30	172	.345	.358	.376	.182	x				x							
31	11	.342	.232	.380	.165			x			x						
32	122	.339	.157	.155	.119	x								x			
33	61	.335	.387	.241	.173			x			x						
34	40	.334	.248	.250	.119	x								x			
35	22	.332	.201	.329	.138	x									x		
36	4	.330	.342	.439	.208	x								x			
37	193	.329	.193	.200	.109	x								x			
38	108	.326	.387	.231	.171	x									x		
39	28	.324	.423	.369	.206	x				x							
40	127	.323	.321	.337	.150	x				x							
41	113	.322	.100	.202	.114	x								x			
42	163	.320	.171	.161	.104	x								x			
43	32	.316	.057	.345	.186	x									x		
44	131	.312	.475	.208	.241		x		x								
45	69	.301	.107	.287	.123	x									x		
46	80	.299	.257	.442	.197		x		x								
47	50	.298	.220	.269	.103	x									x		
48	74	.297	.181	.273	.103			x			x						
49	111	.297	.161	.099	.099	x									x		
50	23	.296	.224	.249	.098	x				x							

APPENDIX IV-B

GRE Advanced Psychology, Form K-VGR1

Item/Factor Correlations in Rank Order for Factor II

Item Rank	Item Number	Item/Factor Correlation I	II	III	Communality	Classification of Item: Experimental	Social	Miscellaneous	Personality	Learning	Measurement	Development	Social	Physiological	Perception	Clinical	Other
1	131	.312	.475	.208	.241		x		x								
2	87	.421	.470	.277	.265	x				x							
3	13	.138	.455	.259	.229		x		x								
4	36	.162	.448	.293	.221		x		x								
5	34	.401	.437	.323	.229	x				x							
6	78	.356	.431	.425	.238	x								x			
7	28	.324	.423	.369	.206	x				x							
8	98	.121	.414	.172	.188		x		x								
9	110	.196	.405	.243	.167		x		x								
10	158	.207	.402	.144	.172	x				x							
11	43	.353	.400	.150	.217	x				x							
12	117	.148	.399	.243	.171		x									x	
13	61	.335	.387	.241	.173			x			x						
14	108	.326	.387	.231	.171	x									x		
15	37	.167	.378	.262	.153		x									x	
16	33	.233	.378	.374	.185		x									x	
17	48	.057	.365	.271	.191		x									x	
18	172	.345	.358	.376	.182	x				x							
19	184	.135	.355	.256	.143		x		x								
20	20	.199	.354	.284	.138		x									x	
21	198	.206	.354	.024	.183			x									x
22	106	.216	.353	.200	.125			x			x						
23	142	.230	.350	.316	.144		x						x				
24	54	.376	.348	.267	.170	x				x							
25	25	.230	.344	.282	.130	x				x							
26	173	.349	.342	.299	.157	x				x							
27	4	.330	.342	.439	.208	x								x			
28	79	.420	.340	.284	.194	x								x			
29	55	.234	.340	.375	.167		x		x								
30	146	.208	.339	.240	.119	x				x							
31	59	.130	.335	.176	.117		x		x								
32	85	.361	.329	.363	.173	x				x							
33	58	.075	.328	.060	.134		x		x								
34	139	.497	.326	.306	.252	x									x		
35	127	.323	.321	.337	.150	x				x							
36	52	.499	.314	.300	.251	x									x		
37	107	.224	.312	.194	.102			x			x						
38	101	.152	.311	.211	.101		x		x								
39	77	.266	.308	.280	.116	x								x			
40	50	.372	.307	.278	.155	x									x		
41	3	.133	.307	.260	.115		x									x	
42	49	.224	.305	.265	.107		x					x					
43	42	.122	.305	.256	.115		x									x	
44	21	.142	.304	.253	.109		x									x	
45	167	.268	.304	.422	.185		x						x				
46	171	.296	.302	.214	.115	x				x							
47	53	.451	.301	.265	.209	x									x		
48	161	.184	.301	.419	.195		x									x	
49	120	.258	.295	.299	.116		x									x	
50	57	.267	.292	.297	.115	x									x		

APPENDIX IV-B

GRE Advanced Psychology, Form K-VGR1

Item/Factor Correlations in Rank Order for Factor III

Item Rank	Item Number	Item/Factor Correlation I	II	III	Communality	Classification of Item: Experimental	Social	Miscellaneous	Personality	Learning	Measurement	Development	Social	Physiological	Perception	Clinical	Other
1	155	.217	.278	.464	.224		x									x	
2	73	.410	.239	.462	.247			x			x						
3	80	.299	.257	.442	.197		x		x								
4	4	.330	.342	.439	.208	x								x			
5	78	.356	.431	.425	.238	x								x			
6	167	.268	.304	.422	.185		x						x				
7	161	.184	.301	.419	.195		x									x	
8	180	.255	.195	.409	.170		x						x				
9	12	.237	.211	.401	.161		x						x				
10	5	.267	.158	.394	.165		x						x				
11	24	.418	.237	.391	.208	x									x		
12	94	.294	.214	.383	.154			x			x						
13	31	.293	.284	.381	.155		x					x					
14	11	.342	.232	.380	.165			x			x						
15	187	.252	.186	.377	.145		x		x								
16	172	.345	.358	.376	.182	x				x							
17	55	.234	.340	.375	.167		x		x								
18	33	.233	.378	.374	.185		x									x	
19	145	.379	.226	.372	.178	x								x			
20	166	.213	.252	.369	.140		x						x				
21	28	.324	.423	.369	.206	x				x							
22	26	.275	.163	.364	.143	x				x							
23	156	.134	.212	.363	.145	x								x			
24	85	.361	.329	.363	.173	x				x							
25	188	.191	.268	.359	.139		x									x	
26	19	.205	.172	.358	.129		x						x				
27	197	.465	.201	.357	.236	x								x			
28	71	.197	.092	.356	.144			x			x						
29	7	.120	.267	.349	.151		x					x					
30	32	.316	.057	.345	.186	x									x		
31	127	.323	.321	.337	.150	x				x							
32	22	.332	.201	.329	.138	x									x		
33	17	.175	.196	.328	.109		x						x				
34	194	.351	.204	.326	.145	x								x			
35	34	.401	.437	.323	.229	x				x							
36	6	.106	.291	.321	.147		x									x	
37	100	.532	.261	.317	.285	x									x		
38	142	.230	.350	.316	.144		x						x				
39	72	.266	.184	.314	.109			x			x						
40	144	.347	.244	.309	.137	x								x			
41	183	.191	.111	.309	.102		x					x					
42	139	.497	.326	.306	.252	x									x		
43	81	.287	.220	.302	.109		x		x								
44	52	.499	.314	.300	.251	x									x		
45	173	.349	.342	.299	.157	x				x							
46	120	.258	.295	.299	.116		x									x	
47	57	.267	.292	.297	.115	x									x		
48	47	.253	.214	.296	.097		x					x					
49	15	.161	.140	.296	.089	x								x			
50	36	.162	.448	.293	.221		x		x								

APPENDIX IV-B

GRE Advanced Psychology, Form K-VGR1

Item/Factor Correlations in Rank Order for Communality

Item Rank	Item Number	Item/Factor Correlation I	II	III	Communality	Classification of Item: Experimental	Social	Miscellaneous	Personality	Learning	Measurement	Development	Social	Physiological	Perception	Clinical	Other
1	100	.532	.261	.317	.285	x									x		
2	87	.421	.470	.277	.265	x				x							
3	139	.497	.326	.306	.252	x									x		
4	52	.499	.314	.300	.251	x									x		
5	73	.410	.239	.462	.247			x			x						
6	131	.312	.475	.208	.241		x		x								
7	78	.356	.431	.425	.238	x								x			
8	197	.465	.201	.357	.236	x								x			
9	2	.477	.200	.266	.233	x									x		
10	115	.477	.274	.266	.229	x									x		
11	13	.138	.455	.259	.229		x		x								
12	34	.401	.437	.323	.229	x				x							
13	155	.217	.278	.464	.224		x									x	
14	36	.162	.448	.293	.221		x		x								
15	43	.353	.400	.150	.217	x				x							
16	45	.456	.205	.279	.212	x								x			
17	53	.451	.301	.265	.209	x									x		
18	4	.330	.342	.439	.208	x								x			
19	24	.418	.237	.391	.208	x									x		
20	28	.324	.423	.369	.206	x				x							
21	151	.435	.164	.257	.197	x									x		
22	80	.299	.257	.442	.197		x		x								
23	161	.184	.301	.419	.195		x									x	
24	79	.420	.340	.284	.194	x								x			
25	48	.057	.365	.271	.191		x									x	
26	98	.121	.414	.172	.188		x		x								
27	32	.316	.057	.345	.186	x									x		
28	167	.268	.304	.422	.185		x						x				
29	150	.427	.235	.221	.185	x								x			
30	33	.233	.378	.374	.185		x									x	
31	198	.206	.354	.024	.183			x									x
32	172	.345	.358	.376	.182	x				x							
33	63	.426	.222	.252	.181	x									x		
34	145	.379	.226	.372	.178	x								x			
35	85	.361	.329	.363	.173	x				x							
36	61	.335	.387	.241	.173			x			x						
37	158	.207	.402	.144	.172	x				x							
38	117	.148	.399	.243	.171		x									x	
39	108	.326	.387	.231	.171	x									x		
40	54	.376	.348	.267	.170	x				x							
41	180	.255	.195	.409	.170		x						x				
42	55	.234	.340	.375	.167		x		x								
43	110	.196	.405	.243	.167		x		x								
44	119	.377	.081	.159	.166	x								x			
45	5	.267	.158	.394	.165		x						x				
46	11	.342	.232	.380	.165			x			x						
47	12	.237	.211	.401	.161		x						x				
48	173	.349	.342	.299	.157	x				x							
49	31	.292	.284	.381	.155		x					x					
50	50	.372	.307	.278	.155	x									x		